



FINNISH CORPORATE INSIDERS:

Composition and Investor Behaviour

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Tutkimuksen tavoitteet

Tämä tutkimus esittelee tärkeimmät sisäpiiriä koskevat säädökset Suomessa sekä viimeisimmät arvopaperimarkkinalakiin tehdyt muutokset. Hyödyntäen ainutlaatuista aineistoa tutkimus käsittelee lisäksi suomalaisen sisäpiirin rakennetta ja ominaisuuksia, esittäen tehtävä- ja yritystason tilastotietoa sisäpiiriläisten 1) omistuksista, 2) kaupankäyntiaktiivisuudesta, 3) perhesuhteista sekä 4) sukupuolijakaumasta. Sijoittajakäyttäytymistä käsittelevässä osiossa pyrin löytämään näyttöä valistuneen sijoittajaryhmän taipumuksesta seurata hienostuneempia strategioita.

Aineisto

Tutkimuksessa käytettävä aineisto kerätty Suomen Arvopaperikeskuksen ylläpitämästä NetSire tietokannasta ja se pitää sisällään omistukset ja omistuksessa tapahtuneet muutokset 1 694 sisäpiiriläisen osalta. Henkilöt koostuvat 72:n eri yrityksen sisäpiiriläisistä ja sisäpiiriläisten sekä heidän lähipiirinsä toteuttamat transaktiot käsittävät yhteensä yli 8 000 kauppaa ajanjaksolta helmikuu 2005 - tammikuu 2006. Osake- ja indeksi-hintadata on vastaavasti kerätty Thomson OneBankerin DataStream-tietokannasta.

Menetelmät

Sisäpiirin rakenteen ja omistusten kuvauksessa on käytetty tilastollisia keskilukuja, taulukkoita ja kaaviokuvia. Sijoittajakäyttäytymisen tutkimiseen on käytetty binomial logistic regression -mallia.

Tulokset

Tutkimusaineistoni osoittaa, että Suomalaiset pörssi- ja sijoituspalveluyritykset ovat rakenteeltaan hyvin miesvoittoisia, erityisesti huippuvirkojen osalta. Aineiston yritysten hallituspaikoista ja ylimmän johdon paikoista lähes 90 % oli miesten hallussa. Aineistoni osoittaa lisäksi, että sisäpiiriläisten omistukset ja kaupankäynti ovat hyvin keskittyneitä. Aineiston perusteella suomalaiset sisäpiiriläisten osaavat kuitenkin hajauttaa sijoituksena verrattain hyvin.

Asiasanat

Sisäpiiri, Kaupankäynti, Omistus, Sijoittajakäyttäytyminen

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1 INTRODUCTION

1.1 Background

The word “insider” may have negative connotations for most people and if we talk in the same context about making business, it is easily connected to something dubious or even illegal. As it sounds, the concept refers to limited group of people, who are inside something and in this context it means being inside of the circle where the information lives. However the concept of insider is not exhaustively defined in legal provisions and consequently the in real world that group consists of professionals with variety of different backgrounds – not only chief executives and board members.

On the Finnish stock market there are close to 1,500 people who are more or less in contact with information that has not been made public and that would be likely to have an effect on the value of publicly traded securities (Kasanen, 1999). Those people are by virtue of their position, employment or responsibilities obliged to disclose all their holdings and trades they execute. In addition to those people whose trades and holdings are subject to public scrutiny, there are also people who for various reasons are registered to companies own non-public insider registers. Thirdly there are an undefined number of random people who have coincidentally received later defined inside information and consequently have become insiders. Together or even individually those people are capable of distorting the price formation of the stocks, either to the right direction or wrong, depending on whether they trade on better information or not. Given the fundamental requirement and assumption of efficient capital markets the market regulators have made the use of such undisclosed information illegal.

History of the Finnish security markets and organized dealing in securities can be traced back to 1860's but proper legislation and code of conduct concerning the insider trading was brought into force as late as in the end of 1980's and since 1996 all trades carried out by the insiders have been open to public scrutiny (Roine, 2005). In the big exchanges around the world the importance of regulating the insiders' trading was realized a long before Finland and the first regulations in the U.S. date back to 1934. Those regulations were put into force due to the views that insider trading was one of the determinants that led to the great stock market crash in 1929 (Kasanen, 1999).

Finnish Financial Supervision Authority (FIN-FSA or RATA) is the institution responsible for the supervision function in the Finnish financial markets and it consequently monitors the parties who operate on these markets. The FIN-FSA evaluates the financial standing, risk-bearing capacity and risk management systems of the supervised organisations but it also acts as an insider police, investigating suspected cases of insider information abuse and other securities market crimes.

The authorities and the market participants monitor very closely the behaviour and holding changes, especially of the first category of the insiders whose trades are to be disclosed. While the supervision authority is interested in preserving the market stability, the market participant's objective is to gain from possible misvaluations by mimicking the trades of privileged corporate insiders. The behaviour and trading activity of the corporate insiders has also been subject to several academic researches, most highlighting the main interest in the corporate insiders' ability to time their trades. Such ability could be interpreted as evidence of illegal exploitation of the later defined inside information.

Several studies have illustrated that the trades executed by the corporate insiders are followed by certain groups of market participants. Those people, who can be referred to as mimickers, believe that the insiders are actually better informed and that the trades they execute are based on some unpublished inside information. The mimickers believe that by following the insiders' trades they are better off compared to the investors relying on only the publicly available information.

The information on the insiders' holdings and trades are collected to later defined registers of insider holdings. Academics, in addition to the supervision authority, are one of the most potential users of the insider registers' data as it contains very detailed information on individuals' ownership and trades. Although this sort of enormous amount of detailed information exists and is stored in a computer database, the availability in an accessible form is limited. This study is limited to the situation in Finland, where it calls for either money or patience to get the data for academic or personal purposes.

In addition to the interest commonly shown in the protective role of the registers of insider holdings, which concentrates mainly on the trades executed by the insiders, there are also other interesting possibilities to exploit that information. This study proceeds from the idea

that the registers of insider holdings offer detailed information on a very limited and powerful group of people. By definition, an insider is a person who possesses inside information by virtue of his position, employment or responsibilities. It can be assumed that the availability of such inside information is restricted to as small group of people as possible and those who actually are exposed to that information, represent the highest level of a company's employees. By grouping the insiders into more heterogeneous groups, the above rationalization gives us a possibility to consider the list of insiders as a list of people who practically run the companies and who can be considered as the cream of Finnish corporate world. Also connecting the information on insiders' trading behaviour to ones personal characteristics i.e. demographic variables available in the registers, it enables more to be learnt about the insiders themselves or the investor behaviour in general.

1.2 Research gap and motivation

Corporate insiders have received plenty of academic attention during the last few decades, but the vast majority of the studies have concentrated on finding evidence on corporate insiders' ability to time their trades and beat the market. The papers challenging efficient market hypothesis find evidence both for and against it, but generality of the most recent studies in the late 1990's and early 2000 find no evidence on insiders' ability to gain abnormal returns (Lakonishok et al., 2001, Kananen, 1999, Eckbo et al., 1998).

Although the question of market efficiency is the most studied and interest-arousing field of insider studies the group of insiders has also offered other perspectives for academic researches. The number of studies concerning the insiders can be extended, if all the studies on specific groups who belong to the insiders are taken under review, e.g. CEO's, board members and analysts. Studies concerning specific groups' characteristics, trading behaviour and trading profitability are quite extensive (Malmendier et al., 2005, Bushman et al., 2005, Gillette et al., 2003). The topic concerns not only the finance scholars but also the field of law and economics. The fundamental question of necessity of regulating and limiting insiders' trading has been one of the questions puzzling the academics across the field (Pope, Morris and Peel, 1990).

Studies with deeper analysis on the composition of the insiders, e.g. descriptive analysis of the insiders' demographic variables, insiders' linkages to other institutions, investment wealth and trading or the above factors' that impact on the investor behaviour are virtually

nonexistent. In many countries the availability of required data is presumably the most common barrier but still one could assume that for example in the U.S. and also in Finland these sort of statistics and studies should be more common. In Finland, the topic has been touched on in a few studies but the closest to my views is Juha Kasanen (1999). His pioneering licentiate thesis for Helsinki School of Economics studied Finnish insiders' stock ownership and trades in the HEX Helsinki Exchange. Kasanen however concentrated more closely on studying the insiders' ability to time their trades but also presented unique figures on insiders' stock holdings and trading activity.

In the light of recent international studies and especially the Kasanen (1999) study, I find it less interesting to concentrate on the question of market efficiency. Instead, I see it more informative to offer somewhat deeper analysis of the insider composition and will also shed light on the behavioural part of the insiders trading activity. This study will take Kasanen (1999) study further by defining the group of insiders in a more detailed manner. It will also follow Grinblatt and Keloharju (2001) by studying the behaviour of Finnish investors but instead examine a more limited group of individual investors.

1.3 Research objectives

This thesis is an in-depth analysis of the Finnish corporate insiders with its structure and investor behaviour as the main concerns. The detailed objectives of this thesis are as follows:

- To review and analyse the current insider regulations and to define who the insiders are according to law book and theory. I will also review the most relevant prior studies and theories concerning the structure of the Finnish insiders and the investor behaviour at a general level.
- To review in depth at the Finnish companies registers of insider holdings and to present a detailed descriptive analysis of the cream of Finnish corporate world. I will give an account of the Finnish insiders' stockholdings, trading activity, linkages to other corporations, family relations and I will also report on miscellaneous statistics concerning the Finnish insiders and corporations.
- To study the investor behaviour of different subgroups of Finnish insiders, with the emphasis on the effect of past returns, reference prices and market/stock volatility.

1.4 Structure of the study

The rest of the thesis is structured as follows; The following section reviews the legislation and regulators standards and principles concerning the insiders' disclosure requirement and trading limitations. The third section provides a theory and literature review in which the relevant theories and previous studies on insider trading and regulation are featured. The fourth section focuses on analysing and describing the data set employed in this study while the fifth section defines the methodology used in following study on insiders' investor behaviour. The sixth section presents the empirical results and final section concludes and summarizes the findings.

2 INSIDER REGULATION IN FINLAND

This section covers the regulations defining, which individuals are subject to the disclosure requirement, how the regulations oblige them and what kind of limitations the regulators set on the insider trading. After the first part in which the general issues are covered, I will review more closely the different regulative and legislative aspects of the insiders as a concept, insider information, insiders and trading, and finally the challenges and difficulties that the supervision authority faces are briefly discussed. As the main objective of this thesis lays in more in the analysis of the insider composition and behaviour, the less important detailed discussion and comparative legislation will be limited. However a short introductory is useful especially due the recent changes in the Securities Markets Act.

2.1 Insider regulation in general

The underlying purpose of all the insider laws and regulations is to foster the efficiency of the capital markets. To achieve efficient markets, the regulator has to ensure the market participants' confidence on the grounds of fair play. It means that the investors have to be able trust the market mechanism in the sense that no other person is in a better position than an other. According to the Finnish Financial Supervision Authority:¹ "The objectives of regulation concerning the publicity of ownership and the maintenance of a public insider register are to promote trust in the market participants, to improve investors' access to market information and to prevent incidents of market abuse."

Regardless of the common sense rationalisations in favour of proper insider laws and regulations limiting insiders' opportunities to trade, the question of their disadvantages should also be pointed out. Pope, Morris and Peel (1990) discussed whether the inside information based trading should, contrary to current and common view, be even encouraged. According to their paper, abolishment of insider regulations and permitting the best-informed participants to trade freely would actually reduce the shroud of mystery related to the insider information and trading. In theory it makes sense that by allowing the insiders to trade freely, the unpublished information would transfer to the stock prices without delay and so the prices would better reflect the actual value of the company. However, even Pope, Morris and Peel (1990) consider those suggestions as theorization and do not believe in their power, if put into practise.

¹ FIN-FSA Standard 5.3., page 5

2.2 Different levels of laws, standards and recommendations

Finnish security markets insider regulations are structured by the following acts and guidelines: (Hirvonen et al., 2003)

- Securities Markets Act, Chapter 5 (13.5.2005/297)
- Penal Code, Chapter 51 (1.4.1999/475)
- The Financial Supervision Authority's Standards 5.2b (amended on 16.8.2005)
- The Financial Supervision Authority's Standard 5.3 (16.8.2005)
- Insider Guidelines published by Helsinki Stock Exchange, the Central Chamber of Commerce (Keskuskauppakamari) and the Confederation of Finnish Industries (Elinkeinoelämän keskusliitto) (1.1.2006)
- Insider and own account trading instructions of Finnish Association of Securities Dealers

2.2.1 *Securities Markets Act as the highest guideline*

The Securities Markets Act (26.5.1989/495) introduced the first insider trading regulations in Finland as recent as in the late 1980's. The regulations concerning the abuse of inside information are recorded in the chapter 5 of the Securities Markets Act. Although the legal references throughout this paper often refer to the Finnish domestic legislation, it should be kept in mind that the domestic regulation in this area originates from the EU legislation. Declarations of insider holdings and the maintenance of an insider register and company specific insider registers are provided in the following EU directives:

- Directive 2003/6/EC of the European Parliament and of the Council on insider dealing and market manipulation (Market Abuse Directive, MAD).
- Commission Directive 2004/72/EC implementing Directive 2003/6/EC of the European Parliament and the Council as regards accepted market practices, the definition of inside information in relation to derivatives and commodities, the drawing up of lists of insiders, the notification of managers' transactions and the notification of suspicious transactions.

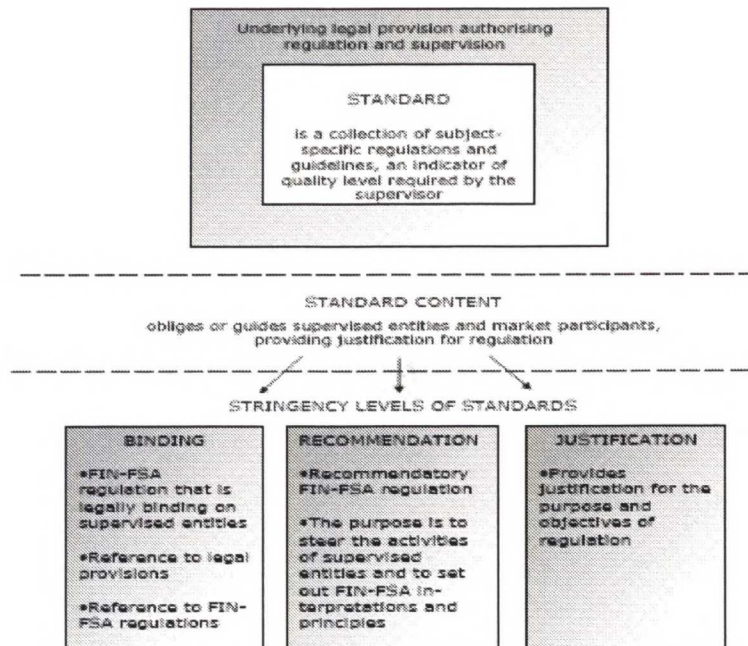
Changes in the directives above were implemented as part of Finnish legislation on 1.7.2005, along with the new Chapter 5 of Securities Markets Act (13.5.2005/297). The name of

Chapter 5 was changed to better correspond with the content and new emphasis of the act. Currently the name refers to market abuse as the main concern, instead of the insiders as a group the regulations oblige. Market Abuse Directives most significant changes to Finnish legislation are related to the registration requirements and prohibition to express inside information. After the changes in the Securities Markets Act, it is only allowed to express inside information to other insiders. The holdings of the related persons of the persons subject to the declarations requirement became consequently open to public scrutiny. It also means that the holdings of the insiders spouse and underage children are public. The companies offering consultancy or other advisory services to an issuer must also keep an insider register of their own employees. However the number of insiders in investment service companies should have decreased as the declaration requirements concerns only the analyst and employees who regularly receive inside information.

According to the Penal Code, the abuse of inside information is prohibited and the possible sanction varies from a fine to imprisonment of up to four years depending on the level of benefit and planning. The Penal Code requires that the offence has been carried out having an intention of obtaining benefit. Securities Markets Act prohibits the abuse of inside information as well but makes no difference if the insider had an intention to gain from the action. The sanctions in Securities Markets Act are however much lower.

2.2.2 The Financial Supervision Authority's standards and other guidelines

The Financial Supervision Authority's (FIN-FSA) collection of subject-specific regulations and guidelines are known as standards. The standards include both legally binding rules and recommendatory provisions. The different levels with descriptions are illustrated in the Figure 1. The legal validity of the standards is a consequence of the Market Abuse Directive and its partial promulgation as FIN-FSA's standards. The standards are generated to set the quality level that the supervisors expect for the supervised entities and other market participants to reach. The FIN-FSA pays special attention to the clarity of provisions and seeks to ensure that the authority's principles correspond to regulatory approaches at international and EU level.

Figure 1: Stringency Levels Used in FIN-FSA Standards

Source: FIN-FSA Regulatory policy

The Helsinki Stock Exchange also has its own Guidelines for insiders. The Guidelines include the most essential rules and regulations applicable to the administration of insider trading issues, an insider's duty to declare and trading restrictions in a listed company. These Guidelines establish a minimum standard for the listed companies, but the companies may adopt stricter rules in their internal codes of conduct.

2.3 Who is an insider?

The group of people exposed to insider information can be divided into persons subject to the disclosure requirement and to the so-called company-specific insiders who are not obliged to declare their shareholdings in a public insider register. However, the issuer must keep a detailed register on the company-specific insiders and the abuse of the inside information is as illegal as in the matter of persons subject to the disclosure requirement.

2.3.1 *Persons subject to disclosure requirement*

Under Chapter 5, section 3 of the Securities Markets Act, the ownership of publicly traded securities becomes public if the owner is:

- a member or a deputy member of the board of directors or supervisory board, managing director or deputy managing director, auditor, deputy auditor or an employer of an audit organisation with main responsibility for the audit, of the issuer of publicly traded shares, central securities depository, stock exchange or broker;
- a person in the company's board of directors who regularly obtains inside information and has the right to make decisions regarding the company's future developments and organisation of its business activities;
- a broker or an employee of an investment firm, whose duties include analysing the publicly traded securities, or other person who by virtue of ones position or responsibilities regularly obtains inside information or
- an employee of the central securities depository, stock exchange or other organizer of public trade and who by virtue of ones position or responsibilities regularly obtains inside information.

Table 1 illustrates the actual titles of the persons subject to disclosure requirement. That list is obtained from The Financial Supervision Authority's regulation number 201.5 on declaration of insider holdings. That regulation was repealed by the new standards 5.2b and 5.3 in August 2005, but the titles still describe the insiders very clearly. The new standards only define the titles in a more detailed manner. The new Standard 5.3 divides the persons subject to the declaration requirement into four groups; Issuers, market participants, fund management company or custodian and related persons of a person subject to the declaration requirement. Detailed listings of the titles belonging in each group can be found from Appendix 1.

Table 1: List of Insiders' Titles

Auditor	Employee of a stock exchange
Auditor with the main responsibility for an audit	Employee of another marketplace
Broker	Employee providing services related to the issue of securities
Chairman of the board of directors	Employee who processes orders
Chairman of the supervisory board	Investment analyst
Deputy auditor	Managing director
Deputy managing director or other deputy for the managing director	Member of the board of directors
Deputy member of the board of directors	Member of the supervisory board
Deputy member of the supervisory board	Other criteria
Employee of a securities depository	

2.3.2 *Company specific insiders*

The company specific insider registers concern only the issuers of securities subject for public trading and those registers are not for public scrutiny. According to The Finnish Financial Supervision Authority's², a company specific insider can be, for example, one of the following:

- a person who by virtue of his position or duties in the issuer regularly obtains inside information
- a person who works for the issuer under a contract of employment or otherwise and obtains inside information
- a person who is a member of the bodies of the issuer and obtains inside information

Company specific insiders can thus be for instance, members of the company's management group, financial managers, departmental managers and other officials of a company, who have information on individual projects, or lawyers or consultants used by the company. Under the Securities Market Act, the company specific insider registers are not public, but the information on individual insiders can be published with permission of the person concerned. The Securities Market Act and the FIN-FSA allows the Finnish companies to use their own discretion when deciding who is to be registered in addition to the mandatory insiders defined in the last section. This is one of the issues Kasanen (1999) brought up in his study and he also presented evidence on major differences in registering practises of the issuer companies'.

² FIN-FSA Standard 5.3, Page 22

2.3.3 *Secondary insiders*

The Securities Markets Act draws a distinction between the so-called primary insiders and secondary insiders. The two groups defined above i.e. the persons subject to disclosure requirement and the company specific insiders, belongs to the primary insiders. Almost anyone may have a possibility to be counted as a secondary insider, as the term refers to any other person who knew or ought to have known that the information in his possession was inside information (Securities Market Act 5:2). One problematic issue is the fact that those secondary insiders are not registered or obliged to disclose their trades. That group of people may include for example the translator of the interim report or people working at the company who print the annual report, a taxi driver or waitress who has heard a confidential phone call or a neighbour of listed company's CEO, who by mistake has slipped some important unpublished information.

2.4 **What is inside information?**

According to Securities Markets Act (5:1), inside information shall refer to any information relating to a security of a company which is precise by nature and has not been published or otherwise been available in the market and which is likely to have a significant effect on the value of the said security. The FIN-FSA specifies that the information can also be related to the issuer or securities markets in general and can include, for example information on the following³:

- Forthcoming corporate restructurings
- Orders to trade
- Share issue
- Purchase offer or redemption offer
- Lowering of the nominal value of a company's share
- Assimilation or division of share series
- Contents of an interim report or financial statements
- Profit warning of a company

³ FIN-FSA Standard 5.3b, Page 16

Information of a precise nature can refer to details concerning circumstances or events that have already occurred or happened or that can reasonably be expected to occur or happen. Exactness also requires that, on the basis of the information, it is possible to make an evaluation of the potential effect of the information on the value of the security. The significance of the information refers in turn to information that a reasonable investor would be likely to use as one ground for his investment decisions.

2.5 Insiders and trading

It is important to highlight that insiders' stock ownership and trading with said stocks is not forbidden or illegal, if the insider in question obeys the rules and laws related to insiders' trading. As already concluded, the reason for regulating the insiders trading is based on an attempt to increase and maintain confidence in the operations of the securities markets. Chapter 5, Section 2 of the Securities Market Act only prohibits the use of inside information in the acquisition or transfer of a security or by directly or indirectly advising another person but sets no further limitations for trading and ownership. Helsinki Stock Exchange, the Central Chamber of Commerce and the Confederation of Finnish Industries have prepared Insider Guidelines for the use of listed companies for the purpose of clarifying the modes of operation in the securities markets. These guidelines set restrictions on trading.

In practice the Guidelines for insiders recommend that the permanent insiders should acquire securities issued by the company they represent as a long-term investments. It is also recommended to schedule the trading of these securities as far as possible to the moment, when the markets have as exact information as possible on the issues influencing the value of the security e.g. after the publication of earnings information.

Guidelines for Insiders also state that the companies shall define the period when the permanent insiders may not trade in securities issued by the company prior to the publication of an interim report and financial statement bulletin of the company (the so-called closed window). This period shall cover at least 14 days. If the company publishes its result information at six-month intervals, the period shall cover at least 21 days. The closed window ends at the time the interim report or financial statement bulletin is published, unless the company has specified a longer period of trading restriction. The company may, where necessary, define also other restrictions on trading.

2.6 Registers of insider holdings

The obligations of the registrar are decreed in the Securities Markets Act, Mutual Funds Act and in the FSA Standard 5.3. The Standard 5.3 lists the entities obligated to maintain a public insider register as follows:

- Securities exchanges
- Other party in charge of the public trade
- Option corporation (derivatives exchange)
- Central securities depositories
- Settlement parties
- Fund management companies
- The issuers of shares subject to public trading and securities carrying entitlement to shares subject to public trading
- Finnish foreign investment firms
- Finnish credit institutions
- Foreign credit and financial institutions who according to their rules or articles of association offer investment services

The most common place for public insider registers is the Finnish Central Securities Depository, who administrates the registers of almost every Finnish listed company and financial services firms. The registrars are free to choose the place where they keep the register available for public inspection, but according to FSA Standard 5.3 it has to be approved by the Financial Supervision Authority. Normally the alternative location is the registrar's head office.

The Finnish Central Securities Depository's SIRE system has several benefits in keeping the insider registers. The major advance is that the SIRE system is linked to the book-entry system which means that the changes in insiders' holdings are updated automatically and without undue delay. The procedure is convenient for the registrars as no separate notification from the insider is needed. Centralized register keeping is also in the interests of the supervision authority, as well as of curious individuals.

After the latest changes in the Securities Markets Act the listed companies are also obliged to publish their insider registers on the internet. The vast majority of the companies already meet the requirements and have their insider registers available either on the company websites or on the FCSD's administrated NetSire. After the transition period on July 1, 2006 all the listed companies have to have the insider registers online which further increases the transparency of the insider trading.

A public register of insider holdings includes personal information on the insiders, i.e. persons subject to the disclosure requirement, and information on their holdings and trading in securities issued by their own company. For investment firms, the requirement to disclose holdings applies to the holdings of all issuers in as much as the information is public. A public register must also contain the corresponding information on insider's spouse or cohabitation partner, persons under ones guardianship and other family members that have lived in the same household for at least one year. In addition, the register must contain information on the above-mentioned persons' securities holdings in controlled corporations and information on corporations in which influence is exercised.

2.7 Supervision

2.7.1 Different instances

The supervision duties related to insider issues can be executed by the following three parties: the listed companies themselves, Financial Supervision Authority and the Helsinki Stock Exchange. In its supervision work, the Financial Supervision Authority monitors the compliance with legal provisions regulating insiders. The basis for the supervision function is the Securities Markets Act. The supervision of securities trading focuses on inspections related to suspected cases of inside information abuse. They carry out both continuous routine investigations and also investigations on the basis of tip-offs. Investigations related to a suspected case of inside information abuse begin mostly in connection to the publication of a company's stock exchange announcement. According to the FSA's website the tip-offs on suspicious cases come from different sources such as the Helsinki Stock Exchange, market participants, the media, individual investors and foreign supervisory authorities.

The Helsinki Stock Exchange monitors the compliance with its own recommendatory Guidelines for Insiders. Those guidelines become binding if a company has decided to apply

them. The Helsinki Stock Exchange also has other rules that regulate the market parties (members, brokers and issuers) disclosure obligations and trading. An essential part of market surveillance is Enforcement, which is independent from the Stock Exchange and the market participants. The Disciplinary Board is the supreme body deciding on the consequences of surveillance actions.

Through the companies own supervision they can prevent activities that violate legal provisions concerning insiders. One important task of the company and its management is to provide sufficient information of the contents of provisions on insiders measures required in order to comply with them. The Helsinki Stock Exchanges Guidelines for Insiders oblige the companies to organize the regular supervision of the trading and impose on them a duty to declare. These Guidelines also lay down several other requirements linked to the management of insider issues.

2.7.2 Recent cases and problems related to supervision

The FSA has very far-reaching authority in getting information from different parties and it can also request assistance from the police in investigating the suspected cases of market abuse. Despite of the extensive tools and authority the FSA has at its disposal, the number of robust cases is still extremely low. The FSA's statistics from 2006 (as of November 30) states that out of 30 investigations only two cases were passed forward to the police. It may speak in favour of fair play on the Finnish stock markets, but at the same time it may demonstrate how difficult it actually is to prove that someone has based ones decisions on inside information.

As an example we can imagine that an insider has decided to sell his/her holdings in the company, but just before the trade he/she receives unpublished information concerning the company's stock. That piece of news would affect positively on the stock price so the insider decides to defer the trade until the news has been published. In this case the insider has broken the law, but there is virtually no risk of being traced and facing charges. (Kasanen, 1999)

At the time of writing, this issue was topical and much discussed in the Finnish media as the former chief executive of Finnish banking group Sampo, Jouko K. Leskinen, was found guilty

of abuse of insider information by the Finnish Supreme Court⁴. The Supreme Court's ruling marked a significant precedent and will provide more arguments to the lower court instances with regard to the future cases, the ongoing case against the owners and directors of TJ Group being one of them⁵. The precedent clarified the Supreme Court's stance on the important issue of when the information becomes inside information and also how the Securities Markets Act's ambiguous definition "information of precise nature" should be interpreted.

The FIN-FSA has also been in the headlines due to the accusations of an information leak in the case of suspected insider trading of Antti Herlin, the CEO of elevator and escalator manufacturer Kone Corporation. In the same context the public debate has turned to the FIN-FSA's resources and authority to investigate suspected cases. Being an indication of whether more active use of inside information or authorities improved abilities, the number of investigated cases has increased dramatically during the year of 2006⁶.

⁴ In 1999, Mr Leskinen bought shares in insurance company Pohjola for people in his immediate circle while Sampo was preparing a merger with Leonia Bank.

⁵ Charges against the TJ Group and its principal owners Jyrki Salminen and Tuomo Tilman included dissemination of information offences and aggravated violations against insider trading legislation. The offences allegedly took place in conjunction with the sale of the company's stock in the spring of 2000.

⁶ Link to FIN-FSA's Statistics:

http://www.fin-fsa.fi/Eng/Statistics/Other_statistics/Cases_of_suspected_market_abuse/etusivu.htm

3 PRIOR RESEARCH AND THEORIES ON THE TOPIC

This section will briefly review prior studies concerning the Finnish and foreign markets insiders and will also build the behavioural framework in which the trading behaviour of the Finnish insiders can be examined. Firstly studies on the insiders as a separate group of investors will be discussed and secondly some theories and studies concerning the investor behaviour in general will be presented.

3.1 Insiders as a separate group of investors

3.1.1 *Ownership and trading of Finnish corporate insiders'*

Kasanen's (1999) licentiate thesis on Finnish corporate insiders' shareholdings and trading in the Helsinki Stock Exchange is a pioneering study describing the Finnish insiders' features by utilizing the Finnish Central Securities Depository's SIRE database. Kasanen studied the insiders of 64 companies listed in the Helsinki Stock Exchange and the data set consisted of 1,836 persons subject to declaration requirement with about 2,000 sell/buy transactions. In his paper Kasanen presents the Finnish insiders ownership and characteristics by reporting the descriptive statistics but primarily he concentrates on testing the market efficiency in Finland.

Kasanen's study shows that in the end of 1997 the persons subject to the disclosure requirement owned some 2% of total market value of the Helsinki Stock Exchange. He finds that the firm specific ownerships varies quite extensively, being over 35% in some companies, while in most of the listed companies the insider ownership remains under 0.1%.

According to Kasanen, the stock holdings as well as the trading activity are in the hands of a very small group of insiders. He finds that 80% of all the stocks owned by the people subject to the disclosure requirement are owned by 3% minority (45 persons) and 56% of the insiders do not own the employers stocks at all. Trading activity is found to be even more concentrated than the ownership. The trades executed by 0.7% minority of the insiders covered over 60% of all the transactions executed by the whole sample of insiders.

Kasanen finds the importance of the controlled corporations very high as the holdings are larger and trading activity much higher as in the case of individuals. He reports that 60% of the insider holdings are owned and almost 90% of all the trades are executed through the

controlled corporations. The median size of a single trade by a controlled corporation is also over 3.5 times larger compared to a private insider's single trade.

Kasanen also finds differences in the trading activity of different insider groups' but the high level of concentration distorts the figures and the distributions are extremely skewed. As an example the data set covered the holdings of 311 board members with trades totalling over FIM 130 million (EUR 22 million) but the trades executed by the five most active board members represented almost 79% of all trades. The activity measured by average figures among the different groups reveals no major differences between the insiders. However, vice members of the supervisory board, board members and chairmen were the most active traders among the different groups of insiders.

As a reference for the Finnish insiders shareownership can be taken Karhunen and Keloharju (2001) paper in which they present in-depth analysis of the patterns in shareownership in Finland in June 1, 2000 and prior changes since 1995. They also provide a detailed description of the portfolios and socioeconomic attributes of wealthy investors. By utilising the database of the Finnish Central Securities Depository, Karhunen and Keloharju were able to report on the number of investors and the proportion of aggregate investment wealth by institutional category; the distribution of individuals' investment wealth by gender, age, mother tongue, municipality, province and country of residence; and the concentration of individuals' investment wealth.

Karhunen and Keloarju (2001) find that foreign investors are the largest investor group with a 69.9% share of the total market capitalization. However, this significant role is largely due to their almost 90% stake in Nokia which accounts for major part of the market capitalization on the Helsinki Stock Exchange. Finnish households are the third largest investor group after foreigners and general government with 7.2% stake of the total market capitalization. They also find that 15.7% of Finnish males and 12.7% of females own stocks directly. For male the stocks account for 63% and for female 37% of the investors combined investment wealth. The median investment wealth for individuals who own stocks is EUR 5,250 whereas the mean is more than seven times larger being EUR 37,640 indicating that there are substantial differences in investment wealth between investors.

Karhunen and Keloharju (2001) also conclude that the shareownership is highly concentrated in Finland and it has become more concentrated over time. The richest 0.1% of the individuals own 32.6% and the richest 1% own 59.4% of the total investment wealth of individuals. Karhunen and Keloharju also presented statistics on the number stocks held in the portfolio. They find that most investors hold poorly diversified portfolios and that only 11.7% of individuals and 14.6% of institutions hold at least five stocks in their portfolio. The average number of stocks held is 2.4 for individuals and 2.9 for institutions. The problem is the same with comparatively large investors, for 5.5% of the Finnish mark millionaires (FIM 1 = EUR 5.94573) hold only one stock and 6.8% hold two.

3.1.2 Insiders motivation to trade

As already highlighted earlier, the trading of the insiders is by no means illegal by default. The insiders are subject to certain limitations and requirements but fundamentally are able to assume similar determinants behind their decisions than the regular investors may have. The insiders may however have some special features affecting their behaviour, such as possible high level of concentration of wealth, and these features may carry some deviant motives for trading. Possession of first-hand information on the companies and market movements is also one characteristic of a large fraction of the insiders and also the group can be assumed to have higher than average education and expertise on how the markets work.

Nunn et al. (1983) studied the performance of stocks traded by members of specific insider groups and recognised different motives for insiders' sell and purchase transactions. According to Nunn et al. the sales are often motivated by liquidity needs, personal portfolio diversification or tax considerations. From these three reasons the diversification is particularly characteristic to the "highest class" of insiders as they are usually involved in the option programs and as a consequence their personal wealth is highly concentrated in one company through forms of investment wealth as well as mental capacity. Among the reasons behind the executed transactions Nunn et al. mention inside information motivated stock selling but that is however only one reason among the others.

Nunn et al. (1983) find only two possible reasons for insiders' stock purchases. To begin with, the insiders may feel loyalty towards their employer and for that reason they feel it proper to acquire some of the company's stocks. Secondly the insiders may be motivated by a simple confidence on the stocks ability to yield profits. That confidence may however be based on

either already published information or privileged inside information. To summarize the findings of Nunn et al. it can be said that insiders may have several rational reasons for executing a sale transaction but the most important motive behind a buy transaction is making profits.

3.1.3 Abnormal profits and illegal insider trading

A vast majority of the studies concerning the insiders are concentrated on testing the market efficiency and studying the insiders' ability to beat the market. As the described activity is out of the scope of this study, only relevant prior studies will be reviewed to illustrate the existence of such phenomena. Besides, the evidence on insiders' ability to create abnormal returns is not enough to prove that they have violated the regulations concerning the insider trading (Givoly and Palmon, 1985). If such evidence was enough for a case, the FIN-FSA would have more investigative cases in process than it currently has.

Findings from the studies concerning the insider trading and its profitability are somewhat contradictory. Kasanen (1999) reviewed fifteen international studies from 1974 to 1998 and reports that in seven⁷ of the fifteen papers, evidence in favour of insiders' superior abilities to time their trades. Corresponding papers with no evidence on immediate abnormal returns, in addition to Kasanen own paper, totalled four⁸

However, the findings in different papers seem to follow a trend in which the older studies from the 70's and 80's presents high abnormal returns but the most recent studies show smaller or even non-existent abnormal returns for insiders. That trend can be explained with good reason by more advanced methodologies producing more accurate estimates and also by the simple fact that the markets have actually become more efficient. That change may be a consequence of developed information systems connecting the investors and relevant market information more effectively than before. Another explanation is the increased regulation and more sophisticated supervision, which make the abuse of inside information more difficult (Kajander, 2002).

⁷ Jaffe (1974a and 1974b), Finnerty (1976), Nunn et al. (1982), Givoly et al. (1985), Seyhun (1985), Pope et al. (1990)

⁸ Seyhun (1998), Gregory et al. (1994), Eckbo et al. (1998) and Lakonishok et al. (2001)

Although Kasanen (1999) find that there is no evidence of systematic abuse of undisclosed information and that the insiders' stock trading is not particularly important issue undermining the credibility of Finnish stock markets, we can not however exclude the possibility of individual cases of market abuse either now or in the future.

3.2 Theories and studies on investor behaviour in general

3.2.1 Different types of investors and level of sophistication

The word investor refers to all individuals and institutions that trade on financial instruments and thus the group consists of people with very dissimilar needs, objectives and abilities. Therefore it is essential to try to outline and group the examined investors into homogenous subgroups where possible. For example, Grinblatt and Keloharju (2000 and 2001) studied the different investor groups on the Finnish stock markets and find evidence on behavioural differences between the different investor types and also isolated some specific motives which drive the investors' decisions. However, people subject to the disclosure requirement have not been under examination so far.

Grinblatt and Keloharju (2000) divide the investors into six different categories; households, non-profit institutions, general government, finance and insurance institutions, non-financial corporations and foreign investors. Considering the group of investors covered in this thesis, they could all be included in the group 'households'. However there are several reasons why the insiders are not analogously members of any of the previously defined groups. For a start, the insiders' trades are to a very high extent executed through their controlled corporations which makes them look more organized compared to regular households. Secondly, the insiders are by definition inside the circle of inside information. Insiders do not necessarily possess any price sensitive undisclosed information, but they surely are in a better position to follow the markets, adopt new tools and receive information which otherwise would be expensive for the regular households. As the trades examined in the section 5 are made by the employees of financial service companies, the question of equating the employees with their employers becomes relevant.

Grinblatt and Keloharju (2000) find that the different investors appear to behave differently according to their assumed level of sophistication. They see the institutions as more sophisticated than individuals as in general they take larger positions, have more resources at their disposal in order to expend on research and in many cases view the investment as a full-time career. More sophisticated groups like foreign investors and domestic institutions seem to follow more sophisticated strategies accordingly. Grinblatt and Keloharju find that the Finnish financial institutions are far less contrarian type of investors, than the regular Finnish households, which is in line with Grinblatt et al. (1995), finding that mutual fund managers tend to pursue momentum strategies.

3.2.2 Theories determining investor behaviour

Several studies have found evidence on so called disposition effect, identified by Shefrin and Statman (1985), meaning that an investor has a tendency to hold losing stocks too long and sell winners too soon. In Saphira and Venezia (2001) paper this phenomena is explained by investors' tendency to "anchor" their reference point to the purchase price while evaluating the investment alternatives and also by investors' tendency to react more sensitively to losses than to profits (loss aversion). Shefrin and Statman (1985) however explain that same phenomena by mental accounting in which the investor keeps separate books for profits and losses. The investor is not willing to close ones loss-making position which would cause him/her feelings of regret. Contrarily the investor postpones that unpleasant event and at the same time realizes his/her profits and takes the pride in the profitable investments. Another explanation for the disposition effect is that an investor might have a view or belief of stocks price reversals, which means that an investor is assumed to have a view that a certain loss-making stock will appreciate or another stock will depreciate (Weber and Camerer, 1998). However, the weak form of the efficient market hypothesis implies that past prices provide no information about future returns, but, as De Bondt (1998) concludes, many investors see patterns where there are none. (Shefrin and Statman, 1985)

On the stock markets the disposition effect increases trading activity especially for those stocks whose price have appreciated in the recent past. There is also evidence that the trading volume appears to grow during the bull market and fall along with the stock prices (Ritter, 2001). During the bull market it is likely that the stock prices are above their purchase price or some other reference price and so the investors are encouraged to cash their positions. In the

opposite situation where the stock markets are bearish and prices below their reference levels, the investors rather stay out of the markets and refuse to realize their losses. (Weber and Camerer, 1998)

In the light of this study's objectives it is also essential to briefly present the concepts of contrarianism and momentum follower. The investors who follow momentum strategies base their strategy on price continuations (Shen et al., 2005). It means that the momentum strategy followers have a tendency to buy past winners and sell past losers in order to gain from continuing price trends. As already referred to earlier, momentum strategy is seen as more sophisticated and according to Grinblatt et al. (1995) it is the one that the mutual fund managers tend to pursue. Grinblatt and Keloharju (2000) also find correlation between momentum behaviour (with respect to both near-term and intermediate-term past returns) and investor performance. They argue that there is a link between a high level of sophistication, momentum strategy and superior performance.

The contrarian strategy relies on price reversals (Shen et al., 2005). The contrarianism is an opposite strategy to momentum which means that an investor is buying past losers and selling past winners believing that the prices have a tendency to reverse. According to Grinblatt and Keloharju (2000) contrarianism is most common amongst the less sophisticated investors' e.g. regular households. They also find that some classes of these contrarians exhibit significantly negative performance. However, they conclude that the association between the contrarian behaviour and poor performance is not a causal relationship.

The latest interesting contribution to the discussion of investors' behavioural patterns is Linnainmaa (2006) paper in which he presents evidence on the limit order effect. A limit order is an order to buy or sell a security at a specific price. A buy limit order can only be executed at the limit price or lower, and a sell limit order can only be executed at the limit price or higher. Linnainmaa (2006) finds that the use of limit orders is an important determinant of many behavioural patterns. He claims that limit orders explain 46% of the disposition effect, 24-100% of contrarian trading strategies, depending on the examined window, and 100% of a tendency to trade against firms' earnings announcements. He also claims that it is the limit order traders who appear to possess negative stock picking skills, who seem to misinterpret new information and who lose money when trading high attention stocks. As an example for the theories discussed above, limit orders are always contrarian

orders as they are executed only when the stock price moves against the order. It may be that all active investors follow momentum strategies, forcing passive limit order investors into contrarian trades. (Linnainmaa, 2006)

3.2.3 *Trading activity*

According to the classic asset pricing models investors should optimally buy a single portfolio and hold it in perpetuity (Grinblatt and Keloharju, 2006). However rational investors make contributions and withdrawals to their personal portfolios on grounds of portfolio rebalancing and minimization of taxes. Some investors may also trade on the basis of superior information. All the volume accounted in the stock exchanges around the world can not however be generated by so called rational investors. The following sections introduce some factors that can explain at least part of the excessive trading activity.

One characteristic, which can be linked to individual investors trading behaviour, is gender. Barber and Odean (2001) studied common stock investments of over 35,000 households and show that men trade 45% more than women. The differences in turnover and return performance are even more pronounced between single men and single women. Barber and Odean (2001) find that single men trade even 67% more than single women. The hypothesis of men being more active traders than women is based on the theories of overconfidence. While both men and women exhibit overconfidence, men are generally more overconfident than women (Lundberg et al., 1994) and that feature is only accentuated in the financial matters (Prince, 1993). The negative part from the male point of view is that Barber and Odean (2000) find that excessive trading leads to poor performance and in their study from 2001 they report that single men reduce their returns by 1.44 percentage points compared to single women, just by over active trading behaviour.

Grinblatt and Keloharju (2001) concentrate on identifying the determinants of buying and selling activity over a two-year period on the Finnish stock markets. They find that the propensity to sell stocks one holds, seems to be positively related to recent returns and the effect of the past returns on the trading activity is much more important for positive past market-adjusted returns than for negative past market-adjusted returns. This is an indication that Finnish investors' decisions are affected by past performance. That finding can be connected to the momentum and contrarian strategies, which are presented in the last section.

More evidence on the past returns' effect and the two different strategies is offered by Choe et al. (1999).

In the same paper Grinblatt and Keloharju also find evidence on Finnish investors' exposure to the disposition effect, identified by Shefrin and Statman (1985) and introduced in the previous section. Grinblatt and Keloharju (2001) also find that on the Finnish markets such disposition effect is eliminated by tax-loss selling during the last weeks of the year, as the investors realize large losses for tax purposes. In their paper, they regard the disposition effect as the opposite of tax-loss selling, in which investors are actually selling the "losers". The same kind of results are also found by e.g. Badrinath et al. (1991) and Sias et al. (1997).

Investor competence is also found to accelerate the trading activity. People are more willing to gamble on their own judgments when they feel skillful or knowledgeable (Heath and Tversky, 1991). Graham et al. (2005) studies into whether this competence effect influences trading frequency and find that investors who feel competent trade more often and have more internationally diversified portfolios. They also find that male investors, and investors with larger portfolios or more education, are more likely to perceive themselves as competent than female investors, and investors with smaller portfolios or less education. In the context of Graham et al. paper, overconfident investors tend to perceive themselves to be more competent, and thus are more willing to act on their beliefs, leading to higher trading frequency.

Agnew et al. (2003) studies allocation and trading of nearly 7,000 retirement accounts of a 401(k) plan in the U.S., which is a retirement savings plan funded by employee contributions and (often) matching contributions from the employer. They find that men invest more in equities than women and trade more actively than their female counterparts. Their research also suggests that a higher salary tends to make investors more aggressive in their allocations and increases trading activity. They find that overall changes in equity allocations correlate significantly and positively with the previous day's equity return, 0.31, while the correlation with the contemporaneous return is much weaker and only marginally significant, 0.12.

4 ANATOMY OF THE FINNISH CORPORATE INSIDERS – DESCRIPTIVE ANALYSIS OF THE DATA

This section will present a descriptive analysis of the composition of Finnish insiders by exploiting the FCSD's (Arvopaperikeskus, APK) administrated web-service NetSire. The first part of this section defines the source, technicalities, limitations and other general information concerning the data, while the rest of the section is dedicated to analysing the insider subgroups' characteristics and stock ownership.

4.1 About the data in general

The data concerning insider holdings, holdings changes and demographics are obtained from the FCSD's administrated web service NetSire. NetSire is based on a more comprehensive SIRE system in which all trading in securities maintained under the book-entry system are entered automatically in a registers of insider holdings. NetSire is accessible online but does not cover all the information from the SIRE system. However the data set applied in this study contains 1,694 insiders from 72 different organizations and executed trades totalling over 8,000. From the sample I have manually excluded individuals whose trades cannot be unambiguously linked to investor's personal trades. Those insiders were employees of FIM Fund Management and their trades on a single stock exceeded over 40,000 trades a year.

Since July 2006, the companies have been obliged to publish the insider registers on the internet. The new regulations did not increase the company coverage of NetSire service but only moved some companies register to companies own websites. The NetSire service provides information on the following issues:

- Insiders organization
- Type of organization (e.g. Issuer or Investment Service Firm)
- Basis for disclosure requirement (see. Appendix 1)
- Persons closely associated with the insider (e.g. Spouse and minors under guardianship)
- Controlled corporations and corporations in which the insider exercises influence
- Holdings for the insider, persons closely associated with the insider and controlled corporations

- Opening/closing balances and trades of a specific stock with ticker symbols, dates and amounts

One limiting issue concerning the data arises from the regulations which say that for issuers, only display of own shares or instruments entitling to own shares is public. For investment service firms, the requirement to disclose holdings applies to the holdings of all issuers in as much as the information is public. In other words, the availability of issuer insider's stock holdings is limited to concern only the employers own securities, while for the insiders of investment firms all their holdings are public. Described limitation affects the Section 5 as the insiders of the issuer companies have to be excluded from the regressions. Another data limitation results from the regulations saying that the changes in the holdings of securities must be available in the internet for 12 months from the time the change occurred. This limits the possible time period under review to 12 months from February 2005 to January 2006.

Although the Finnish legislation obliges the authorities and companies to collect and register very detailed information on the insiders, the utilisation of the data is still very difficult and is almost entirely limited to FIN-FSA's own investigations. Only a very few Finnish studies have been able to utilize the Finnish Central Securities Depository's database, Grinblatt and Keloharju (2000 and 2001), Karhunen and Keloharju (2000) and Kasanen (1999) being the most well known studies. In addition to limited availability of academic research, the authorities offer no relevant statistics on the topics discussed in this paper, although the figures might interest numerous observers. The defined problems of limited availability of relevant statistics and usable data, makes here employed hand collected data set very unique as this study is able to define the Finnish insiders' characteristics on a very detailed manner.

4.2 Basic information on the insiders and the companies

My data set is founded on the insider information of 38 issuing and 34 investment service companies. The listing of sample companies is presented in Appendix 2. The names under those 72 companies total 4,291, but after excluding persons whose disclosure requirement have already expired, the number drops down to 1,981 and after excluding multiple registrations the final figure is 1,694 subject to disclosure requirement. The multiple registrations are however included in the examination in which comparative figures are presented between the titles, companies and other determinants. In those cases, the used total

number of insiders is 1,981. The data set covers 36% of all the Finnish listed companies and 54% of the Finnish investment service companies.⁹

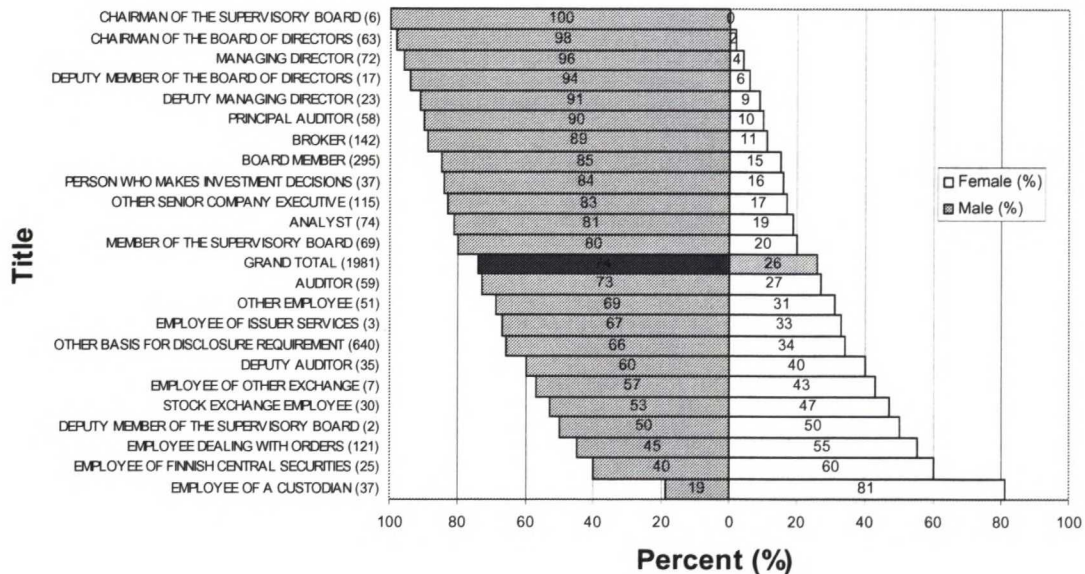
Investment service companies' employees seem to have stricter requirements to disclose their shareholdings. In investment service companies, the average number of registered insiders is 36.4, while in the issuer companies the figure is 19.6. These figures do not take into account the insiders' proportion of the total number of employees in the company but presumably investment service companies' rate would be higher in that case as well. That is due to the regulatory differences in The Finnish FSA's Standard 5.3 for the two different organization types. Investment service companies' large employee groups e.g. brokers, analysts and employees dealing with orders, are obliged to disclose their stock holdings but in the issuer companies such groups do not exist. The total number of insiders also seems to be non-dependent on the listed company's size in terms of market value. That is logical as the law requires similar administration irrespective of the company's size.

Figure 3 demonstrates the insiders' gender distribution by registered persons' title. It shows that the top positions in the Finnish corporations and the Finnish finance sector as a whole seem to be extremely male-dominated. Out of the 1,981 insiders included in the sample, 74% are men and only 26% women. The titles in the Figure 3 are sorted so that the most male-dominated titles are highest in the list and as an example 98% of the chairmen of the board of directors are men, while for the 72 managing directors the same figure is 96%. It is also noteworthy that out of 295 board members only 15% are women. The same pattern also holds true for all the most influential positions and women seem to dominate only the least responsible positions.

⁹ The number of financial services companies is obtained from the Finnish FSA's list of supervised companies. See: http://www.rahoitustarkastus.fi/Eng/Supervision/Supervised_entities_and_notifications/.

Figure 2: Insiders' Gender Distribution By Titles

The figure presents the gender distribution of the insiders based on the insider register data of 38 issuers and 34 investment service companies in the beginning of February 2006. The whole sample consists of 1,981 insider registrations. The figures after the titles presented on the y-axis indicate the total number of individuals in the category. The figures inside the bars are percentages the gender contributes to the title category.



Company specific statistics on the gender distribution (see Appendix 3, 4 and 5) indicate the same phenomena of male-dominance. Listed companies on the Helsinki Stock Exchange appear to be even more male dominated than the investment service companies as can be seen from Table 2. Six OMX main list companies can be found from the Netsire's sample, which have not accepted a single woman to the top positions. Six listed companies out of 38 have one woman at the executive level. Financial services companies seem to be less male-dominated in terms of overall number of female insiders, but in terms of top position occupations, they have an even smaller number of women on the company payroll (see Table 3).

Table 2: Insider Distribution Between Genders and Organization Types

Organization type	Gender		Total
	Male	Female	
Issuer	625 (84 %)	119 (16 %)	744
Investment Service Company	835 (68 %)	402 (32 %)	1237
Total	1460 (74 %)	522 (26 %)	1981

Table 3: Gender Distribution of Board Memberships and Top Positions

Absolut figures present the total number of gender representatives in the specific group of position and company. The percentages after absolut figures are the fractions of the total number of both female and male representatives in the specific group.

	Gender				
	Women		Men		All
Board Members*					
Investment Service	9	6.7 %	125	93.3 %	134
Issuer	37	15.4 %	204	84.6 %	241
All	46	12.3 %	329	87.7 %	375
Top Positions**					
Investment Service	15	8.0 %	172	92.0 %	187
Issuer	70	14.7 %	405	85.3 %	475
All	85	12.8 %	577	87.2 %	662

* Board Members consists of the chairman of the board, board members and deputy board members.

** Top Positions category consists of the managing director, deputy managing director, other senior company executives, chairman of the board, members of the board, deputy members of the board, chairman of the supervisory board and members of the supervisory board.

* Board Members consists of the chairman of the board, board members and deputy board members.

** Top Positions category consists of the managing director, deputy managing director, other senior company executives, chairman of the board, members of the board, deputy members of the board, chairman of the supervisory board and members of the supervisory board.

The largest single group of insiders is the group consisting of people coded as “Other basis for disclosure requirement”. The total number of insiders in that category is 640, representing 32% of the entire sample. These people are subject to the disclosure requirement due to employer’s opportunity or obligation to complete the list of insider by using their own discretion. As Table 4 illustrates, there seems to be major differences in the practise of that obligation. For Investment Service Companies the maximum number of insiders coded as “Other basis for disclosure requirement” is 56 while the minimum is 1. The whole sample average for such insiders is 13.2. For the Issuer companies the maximum and minimum figures are 25 and 1 respectively while the average is 7.9. In Kasurinen (1999) paper the reported proportion of the same group was 38.5% while minimum and maximum being 0 and 73 respectively. The decrease in the total proportion and maximum number of the examined

group of investors can be explained by the change of legislation which currently obliges the companies to more precisely define the basis for registration.

Table 4: Other Basis For Disclosure Requirement

The table presents the minimum, maximum and average figures for number of insiders coded as "Other basis for disclosure requirement".

Company Type	Minimum	Maximum	Average
Investment Service	1	56	13.2
Issuer	1	25	7.9
Whole Sample	1	56	10.8

4.3 Finnish insiders' linkages

Table 5 illustrates that out of data samples 1,694 insiders, 12% have more than one registration, which means that they are exposed to inside information of several separate companies. However, the most common reason for multiple registrations is that the insider is an employee of several companies in the same investment service group. For example Mari Tyster is an insider of four different companies that all belong to FIM Group; FIM Asset Management, FIM Corporate Finance, FIM Securities and FIM Fund Management.

If we look at the percentages in Table 5, it shows that there is no major difference between male and female genders in terms of tendency to have more than one registration. To compare, 13.6% of male insiders have more than one registration and for female the same figure is 8.1%. The difference seems to diminish even further if we examine insiders with more than two registrations.

Table 5: Number of Registrations by Gender

The table reports the Finnish insiders multiple registrations for both genders and in total. The first column of each category presents the number of insiders having certain number of separate registrations e.g. 38 females are insiders of 2 or more different companies. All the higher multiple registration categories are included in the lower categories. The second column for female and male reports the percentage of female/male in that category of all insiders of same gender. Column '% of All' reports the percentage of the specific category of all the insiders in the sample.

	Female			Male			All	
	# of insiders	% of Female	% of All	# of insiders	% of Male	% of All	# of insiders	% of All
1 or more	468	100.0 %	27.6 %	1226	100.0 %	72.4 %	1694	100.0 %
2 or more	38	8.1 %	2.2 %	167	13.6 %	9.9 %	205	12.1 %
3 or more	11	2.4 %	0.6 %	33	2.7 %	1.9 %	44	2.6 %
4 or more	4	0.9 %	0.2 %	15	1.2 %	0.9 %	19	1.1 %
5 or more	1	0.2 %	0.1 %	6	0.5 %	0.4 %	7	0.4 %

Auditors and board members are the most influential groups of insiders in the Finnish corporate world, if we use the multiple registration as a proxy for power. As Appendix 6 presents, excluding ‘Other basis for disclosure requirement’, auditors and board members are the most common titles for insiders who have at least two registrations. However, auditors have a very limited influence on the companies’ decision making, leaving the board members to the top position. Appendix 7 presents the sample insiders ranking list and in the top 20 there are 12 auditors and 5 board professionals. The most interesting individual insider seems to be Antti Mäkinen who is an insider of three different fund management companies.

4.4 Persons closely associated with insider

Out of data samples 1,694 insiders, 48% do not have any children. According to Table 6, the average number of children in the families of those remaining 815 insiders is 1.92. That figure is somewhat higher than for the Finnish families in general. The most common number of children seems to be two and those families represent 45.9% of all the families under review. In general a typical Finnish family has only one child and those families represent 43.2% of all the Finnish families.

Table 6: Insiders and Number of Children

The table classifies the insiders into four different categories depending on the number of children the particular insider has. Only those insiders who have either one or more children are taken under examination. In addition there are 879 insiders with no children and they represent 52% of the whole sample insiders.

	Number of Children				Total
	1	2	3	> 4	
Number of Families	271	374	144	26	815
Percentage (%)	33.3 %	45.9 %	17.7 %	3.2 %	100.0 %
All Finnish*	43.2 %	38.1 %	13.9 %	4.8 %	100.0 %
Average number of children					
All Families	1.92				
All Finnish*	1.83				

* Source: Statistics Finland, Demographic statistics 2004

It seems that the Finnish male insiders have more children on average compared to their female counterparts. As the Table 7 shows, for men the average number of children is 2.0

while for women it is 1.7. In addition 51.3% of all the sample male insiders seem to have children, whereas for female insiders the same figure is 39.7%.

Table 7: Average and Median Figures for The Number of Children

	With Children			All Insiders		
	Average	Median	N	Average	Median	N
Men	2.0	2	629 (51.3 %*)	1.0	1	1226
Women	1.7	2	186 (39.7 %*)	0.7	0	468
All	1.9	2	815 (48.1 %*)	0.9	0	1694

* Percentage of row total

Table 8 categorizes the sample insiders with children into four different groups. The most common family type is where the insider has a spouse and one or more children. Those families represent more than half of all the examined families. An interesting detail is the large percentage of single parents who represent close to 18% of all families. Compared to the statistics for the Finnish population as a whole, the percentage of single parents is much higher. It indicates that the Finnish insiders' propensity to get divorced is higher than for the regular individuals. Overall percentages for the male and female are not comparable because the two genders are not equally represented in the sample. If the figures for single parents are proportioned to the total number of each gender, instead of total of all families, the single female parents are more common than their male counterparts. Single insiders represent 31% of the whole sample. Appendix 11 and 12 describe the issue of family relations on a more detailed level, presenting the mean number of children and marital status for the different title categories.

Table 8: Insiders and Family Relations

Family type	Families	Percentage	All Finnish*
Cohabiting couple without children	360	30.6 %	45.7 %
Cohabiting couple with children	606	51.6 %	41.3 %
Mother with children	73	6.2 %	10.9 %
Father with children	136	11.6 %	2.1 %
All families	1 175	100.0 %	100.0 %
Single	519	31 % **	

* Source: Statistics Finland, Demographic statistics 2004

** Percentage of Single insiders of the total number of insiders totalling 1694.

4.5 Finnish insiders' stock holdings

Table 9 illustrates that 61.6% of all the listed companies insiders own their employers' stocks. The figure has increased since Kasanen (1999) study in which he found that in the end of 1997, 44.1% of all issuer insiders had holdings in their employers stock. The figure seems still relatively low as the group consists of top management and other executives who presumably are part of companies' stock option based incentive programs Appendix 8 presents the distribution of issuer companies insiders who do not have any holdings in their employers stock. The table illustrates that there is not only one group which would explain the low figure of own company holdings and even the most usual suspects of Auditors and insiders coded as 'Other basis for disclosure requirement' together, explain only some part of the finding. On the contrary it seems that there are large group of influential people, e.g. woman board members and other senior company executives with no stock holdings at all. It is more of a characteristic for the female employees. Out of the 32 managing directors included in the data set, 13% do not own any stock in the company they lead. Kasanen (1999) reported that 35% of the managing directors have no holdings in their own company stock, so it seems that the share of zero holder CEO's have decreased since Kasanen study.

Table 9: Insiders' Investment Wealth

	# of Insiders	Percentage	Investment Wealth	
			Average	Median
Issuer				
Zero Holdings	256	38.4 %	-	-
Own Stock Holdings	411	61.6 %	1 038 995.28	8 481.98
All	667	100.0 %	640 220.48	0.00
Investment Service				
Zero Holdings	338	32.9 %	-	-
Stock Holdings	689	67.1 %	71 360.19	1 969.50
All	1027	100.0 %	47 874.56	0.00

For investment service companies, the figures in Table 9 include all stock holdings in any listed company in Finland. It seems that two thirds of all the investment service companies' insiders do have stock holdings and on average they have stocks worth over EUR 70,000. However, the median portfolio is only worth EUR 1,969.50, indicating that the investors' investment wealth varies significantly. Direct stock holdings seem to be more common

amongst the investment service professionals, than among the general Finnish people. Karhunen and Keloharju (2001) find that 15.7% of Finnish males and 12.7% of females own stocks directly. According to my data set the same figures for investment service professionals are 71.9 and 57.9 respectively.

Table 10 below indicates that holdings of the two different insider categories are extremely concentrated into very few investors. In issuer companies the situation is even more prevalent than in investment service companies. The 25 largest insider investors hold 93.8% of all the issuer insiders' own stock holdings and for Top 100 the figure is 99.1%, leaving only 0.9% for the rest 567 insiders. However, it is important to recall that out of those 567 insiders 256 do not own any employer company's stocks.

Table 10: Concentration of Investment Wealth

Largest Investors	Issuer		Investment Service	
	Investment Wealth in euros	Proportion	Investment Wealth in euros	Proportion
Top 5	307 619 376.40	72.0 %	22 195 622.48	45.1 %
Top 10	357 665 211.60	83.8 %	28 747 444.10	58.5 %
Top 25	400 456 177.05	93.8 %	37 775 189.72	76.8 %
Top 50	414 972 404.84	97.2 %	42 778 979.09	87.0 %
Top 100	423 277 286.93	99.1 %	46 369 797.03	94.3 %
All	427 027 058.51	100.0 %	49 167 171.49	100.0 %
Percentage of All Insiders				
1 %	338 164 715.70	79.2 %	28 747 444.10	58 %
3 %	391 358 068.94	91.6 %	39 508 355.71	80 %
5 %	408 619 930.74	95.6 %	42 900 344.08	87 %
10 %	418 849 051.65	98.1 %	46 486 619.92	95 %
15 %	423 348 266.93	99.1 %	47 748 314.24	97 %
100 %	427 027 058.51	100.0 %	49 167 171.49	100.0 %

For investment service companies' insiders, for whom the stock holdings include all holdings in Finnish listed companies, the Top 25 ownership is 76.8% and for the Top 100 the figure is 94.3%. This category contains more observations so the remaining group is thus larger than for issuer companies. All in all, the high level of concentration is characteristic for the investment service companies as well, but is not as strong as it is for issuer companies.

Issuer and investment service companies' insiders' mean investment wealth for different titles are presented in Appendix 9 and 10. Appendix 9 presents the issuer companies insiders mean and median stock holdings in the two last columns. The data from 38 issuer companies indicates that managing directors are clearly the largest share holders. However, the ownership is again very concentrated and by excluding the two largest share holders, Sampo Group's Björn Wahlroos and F-Secure's Risto Siilasmaa, the average drops down to EUR 350 000, from over EUR 7 million. The same problem of concentrations holds true for all the largest subgroups. By excluding the two largest share holders of the chairmen of the board, Heikki Pentti from Lemminkäinen and Juhani Maijala from Lassila & Tikanoja, the average drops down to EUR 470,000, from over EUR 3.5 million. Companies' auditors do not own any stocks in the companies whose accounts they are responsible for and the small amounts presented in the Appendix 9 and 10 result from registrations in investment service companies where they are obliged to disclose all their holdings.

Appendix 10 lists the investment service companies' insiders' mean and median stock holdings in the last two columns. Again the top positions are occupied by the same titles but for investment service companies the average stock holdings are significantly lower than for issuer companies, even though the figures include all insiders holdings, not only holdings in employers stock. The absence of single extreme individuals, like Wahlroos and Siilasmaa, explains to large extent the major gap between the mean figures but still the issuer insiders median figures are many times larger compared to the investment service companies medians.

The level of investment wealth varies also with the type of household the individual insider represents. Table 12 illustrates that in general, single female parents seem to have the smallest holdings in listed companies indicated by the lowest average portfolio value but if we examine the median figures the situation is different. The cohabiting couples with children seem to have the largest portfolios measured with the mean figures but the median portfolio drops the group to the last position. That indicates that the group contains some extremely wealthy insiders who improve the mean figures, but the median family has less investment wealth than any other family type. However, if we examine the cohabiting couples without children my findings are in line with Agnew et al. (2003) who find that married investors tend to invest more in equities than their single counterparts. It is important to note here that the cohabiting couples' figures include both insiders and his/her spouses holdings, but still the mean figure is 5.5 times larger and hence the defined data inconsistency does not explain the

difference. The median figures for investment wealth claim that in general the families without children have more money in stocks than the cohabiting couples and singles with children. It also seems that single mothers have more stock investments than their male counterparts.

Table 14 defines the differences between the two genders. It presents mean and median figures for the number of stocks in investment service firms' insiders' portfolios, executed transactions and portfolio values. It seems that on average men have larger portfolios, both in terms of portfolio value and number of stocks. Men's holdings seem also to be much larger in individual stock as the average portfolio value does not increase in line with the average number of securities. For men, the mean portfolio value is ten times the same figure for women, but only 3.5 times larger if it is measured by median figure.

If the both genders summed portfolio values are compared to Karhunen and Keloharju (2001) findings, we can conclude that a median portfolio seems to be almost exactly as large for investment service professionals as it is for all Finnish individual investors median portfolio. However investment service professional's average portfolio is 2.5 times larger than for average Finnish investor, indicating that there are more substantial differences in investment wealth between investment service companies' insiders. In general the investment service professionals have very well diversified portfolios. On average men have 8.4 securities in their portfolios, whilst for women the same figure is 5.2. For both genders the average and median are 7.5 and 4 respectively. Karhunen and Keloharju found that the average number of stocks held is 2.4 for Finnish individuals and 2.9 for institutions. That indicates that the investment service professionals are more sophisticated compared to the average Finnish investors.

4.6 Finnish insiders' trading activity

The dataset employed in this study also contains the transactions executed through the controlled corporations and persons closely associated with an insider. Those transactions account for 40.6% of all sample transactions. That number is much less than Kasanen (1999) finds in his study. He reports that 67.6% of all the insider transactions are executed through controlled corporations and if the contribution is measured with total value of transactions the controlled corporations' accounts for 89% of all transactions. Table 11 illustrates the share of controlled corporations and closely associated persons trades from all executed trades. For

female investment service companies insiders the proportion seems to be much higher than for males.

**Table 11: Controlled Corporations and Closely Associated Persons
Share of All Transactions**

Gender	All Trades	Through Others*	Percentage
Female	917	629	68.6 %
Male	7277	2697	37.1 %
All	8194	3326	40.6 %

* Consists of trades executed through controlled corporations or closely associated persons.

Table 12 presents the average transaction figures for five different household categories. In general it would sound sensible that single individuals and cohabiting couples without children would trade more than families with children, because they can be assumed to tolerate more risk. However, during the one year period under review, the families with children have been more active than the corresponding families without children. Only single female parents have traded less than the singles without children. The most active traders have been cohabiting couples with children and they have executed on average over 14 transactions during the one year period.

It seems that there is no major difference between buy and sell transaction figures, but generally the sample contains more sell transactions. Only single females with children and cohabiting couples without children have executed slightly more buy than sell transactions. It also seems that the trading activity is connected to the average stock holdings of the specific group. Table 13 defines more closely the relationship between family size and trading activity. It seems that the trading activity increases with the size of the family.

Table 12: Household Type, Activity and Portfolio Size

The figures are calculated from insiders who owned at least one stock in the beginning of Feb 2005.

Type of Household	Number of Insiders	Zero Traders (%)	Mean of Transactions			Investment Wealth (EUR)		Number of Securities	
			Buy	Sell	All	Mean	Median	Mean	Median
Single without children	231	45.9 %	3.11	3.25	6.36	17 935.65	2 626.00	6.21	4
Mother with children	36	52.8 %	2.64	1.61	4.25	10 067.73	2 559.35	5.00	3
Father with children	67	43.3 %	5.75	6.54	12.28	65 758.52	1 890.00	7.81	4
Cohabiting couple without children	87	48.3 %	4.93	4.76	9.69	99 976.55	2 699.85	7.15	5
Cohabiting couple with children	268	47.8 %	8.88	9.43	18.31	117 753.05	1 004.90	8.95	5
Investment service Total	689	47.0 %	5.82	6.08	11.89	71 360.19	1 969.50	7.48	4

Table 13: Number of Children, Activity and Portfolio Size

The figures are calculated from insiders who owned at least one stock in the beginning of Feb 2005.

Number of Children	Number of Insiders	Zero Traders (%)	Mean of Transactions			Investment Wealth (EUR)		Number of Securities	
			Buy	Sell	All	Mean	Median	Mean	Median
No Children	318	46.5 %	3.61	3.66	7.27	40380.80	2662.93	6.47	4
One Child	115	51.3 %	8.31	6.38	14.70	34496.39	1455.00	6.47	4
Two Children	180	47.2 %	6.43	8.17	14.61	87901.40	1145.67	9.16	5.5
Three Children	65	46.2 %	9.68	10.71	20.38	181547.17	1969.50	9.26	5
More Than Three Children	11	18.2 %	10.64	11.00	21.64	430561.14	1693.77	9.64	6
Investment service Total	689	47.0 %	5.82	6.08	11.89	71360.19	1969.50	7.48	4

The statistics also suggest that the male insiders' trade much more frequently compared to their female counterparts, which is in line with the previous findings (Barber and Odean, 2001, Agnew et al., 2003, Graham et al., 2005). In the data set, all intraday buy and sell transactions with one individual stock are netted so certain more complex strategies do not distort the examination of trading activity. During the one year period under review the male insiders have executed on average 15 trades, while for women the same figure is over three times smaller, totalling 4.5 trades. On average the investment service companies' insiders executed 11.9 trades during the one year period under review.

Table 14: Investment Service Companies Insiders' Trading Activity and Holdings

The figures are calculated from insiders who owned at least one stock in the beginning of Feb 2005. For transactions the period under review is Feb 2005 - Jan 2006.

	Gender		All
	Female	Male	
Whole sample	354	673	1027
Zero Holders	42.1 %	28.1 %	32.9 %
N=at least one stock	205	484	689
Zero Traders (%)	62.4 %	40.5 %	47.0 %
Buy Transactions			
Mean	2.3	7.3	5.8
Median	0	0	0
Sell Transaction			
Mean	2.2	7.7	6.1
Median	0	1	0
All Transactions			
Mean	4.5	15.0	11.9
Median	0	2	1
Number of Securities			
Mean	5.2	8.4	7.5
Median	3	5	4
Stock Holdings (EUR)			
Mean	13 021.75	132 324.80	97 360.74
Median	2 491.70	8 791.45	5 350.70

Appendix 10 presents the trading activity statistics on the different categories of investment service firms' insiders. As the table indicates the three most active insider groups are deputy managing directors, brokers and board members. The figures for those three groups are much larger than for any other group, but again the significantly lower median figures indicate that the group is not homogeneous. It is also distinctive that the high trading activity figures are not reflected in the portfolio values as Graham et al. (2005) find. However, my findings seem to be in line with other findings by Graham et al., that the investor's education and therefore feeling of being more competent is positively correlated with trading activity, as can be seen from the top traders titles.

5 FINNISH INSIDERS' INVESTOR BEHAVIOUR

In this section I will employ regressions to analyze the sample insiders' investor behaviour. Applied binomial logistic regression is presented shortly in the following section. More precisely, this section will concentrate on the determinants behind investors' decisions on whether to buy or sell stocks and also on finding evidence on the best informed investors' tendency follow momentum strategy as previous studies have claimed. As the data set used in this study is obtained from the companies insider registers, the information on insider holdings are complete only for the investment service firms' employees. This prevents me to study the behaviour of issuer companies' employees' but does not undermine the objective to study the behaviour of the best informed individuals. For analyzing the investor behaviour in the sense of whether to buy or sell stocks I will follow the methodology used by Grinblatt and Keloharju (2001) in their study on the investors' motivations to trade on the Finnish stock markets.

5.1 Sub-group division

To better illustrate the probable differences between the different groups of insiders, the insiders will be divided into five different sub-groups following the division presented in the Table 15 below.

Table 15: Insider Group Division

Group 1 - Top Management - Board member - Chairman of the board of directors - Chairman of the supervisory board - Deputy managing director - Deputy member of the board of directors - Deputy member of the supervisory board - Managing director - Member of the supervisory board - Other senior company executive	Group 2 - Auditors - Auditor - Deputy auditor - Principal auditor Group 3 - Analysts and Portfolio Managers - Analyst - Person who makes investment decisions on behalf of a management company Group 4 - Brokers - Broker	Group 5 - Other Employees - Employee dealing with orders - Employee of Finnish central securities - Employee of issuer services - Employee of other exchange - Other basis for disclosure requirement - Other employee - Stock exchange employee - Employee of a custodian who gains information on investment activities
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The division takes into account the different levels of companies' employees and also the source and type of information the specific groups may possess. For example, the insiders in the Group 1 are the most influential and experienced people with an extensive contact network in the Finnish corporate world but they do not necessarily follow the markets and specific companies as closely as the analysts and brokers. Groups 3 and 4 collect information

on a more systematic way and they have slightly closer relationship with the markets and new methods. Group 2 is a special case of insiders as the auditors behaviour is to high extent limited by the professions own moral and ethical norms. They can be assumed to avoid all situations in which there might be any conflict of interest and therefore they do not necessarily behave under the same grounds as the other investors. That is highlighted by a very low volume of executed trades and the size of the portfolio. Group 5 on the other hand is a very heterogeneous group as it contains the largest number of individuals and different titles. These people can be assumed to have the least experience and education. In addition the information is in most cases limited to other investors moves on the market e.g. volumes of trades on different securities. However, the insiders labelled as “Other basis on disclosure requirement” include also top management advisors whose expertise is higher than an average investors’.

5.2 Methodology

For analyzing the determinants that drive the investors’ behaviour in the situation of Sell vs. Buy binomial decision problem, I will apply binomial logistic regression using SPSS software. Logistic regression is useful for situations in which one wants to be able to predict the presence or absence of a characteristic or outcome based on values of a set of predictor variables. It is similar to a linear regression model, but is suited to models in which the dependent variable is dichotomous. Logistic regression coefficients can be used to estimate odds ratios for each of the independent variables in the model.

Logistic regression has many analogies to OLS regression: logit coefficients correspond to b coefficients in the logistic regression equation, the standardized logit coefficients correspond to beta weights, and a pseudo R^2 statistic is available to summarize the strength of the relationship. Unlike OLS regression logistic regression does not assume linearity of relationship between the independent variables and the dependent, does not require normally distributed variables, does not assume homoskedasticity, and in general has less strict requirements. It does, however, require that observations are independent and that the independent variables are linearly related to the logit of the dependent. It is worth highlighting that logistic regression calculates changes in the log odds of the dependent and not changes in the dependent itself as OLS regression does.

5.3 Dependent and independent variables

To identify the determinants of buying and selling activity binomial logistic regressions will be run, where for each class of the insiders under review a relation between the dependent variable (sell vs. buy) and 41 regressors will be estimated. The dependent variable is derived from a dummy variable that, depending on a transaction, is coded as “1” if the transaction is a sell and “0” if it is a buy. Following Grinblatt and Keloharju (2001) a set of variables related to past returns, reference prices, stock market volatility and insider characteristics will be included.

I will report 33 different variables related to the past returns. The past return variables represent either positive market-adjusted returns (Panel A in Table 16), negative market-adjusted returns (Panel B in Table 16) or market returns (Panel C in Table 16) over 11 non-overlapping trading day horizons; the current day (day 0), 4 days prior to the trade (days -1, -2, -3, -4) and series of multi-day returns (days -19 to -5; -20 to -39; -59 to -40; -119 to -60; -179 to -120 and -239 to -180). Positive (negative) market-adjusted returns are calculated by taking each transactions maximum (minimum) of either zero or market-adjusted return over a specific interval. The stock returns are adjusted using the return of OMX Helsinki - index over the same interval. Stock and market returns are obtained using Thomson Datastream.

The purpose is to determine how big role the past returns play in the investors' decision making process. They also analyze whether some historical intervals are more important than others and whether positive market adjusted returns matter more than negative past returns. As one of the objects of this thesis is to study the insiders' trading behaviour, exploring the historical return variables may give us more evidence on more sophisticated investors' being momentum type of investors as Grinblatt and Keloharju (2001) find. In the light of evidence provided by Grinblatt and Keloharju (2000 and 2001) on more sophisticated investors' tendency to be momentum followers, it is justified to assume that the best informed professionals would be momentum investors as well, instead of behaving like regular households. The first hypothesis is linked to the examination of past returns role in investors buy/sell decision making process.

Hypotheses 1: Insiders as more sophisticated investors are inclined to exhibit momentum behaviour.

Reference price variables (Panel D in Table 16) examine the insiders' propensity to sell the holdings if the stock has hit its one month high or low i.e. if the selling price is over (under) the one month maximum (minimum) price. Reference prices have been shown to influence investor behaviour and Heath, Huddart and Lang (1999) for example find that employee stock options tend to be exercised when stocks have reached their yearly high. Grinblatt and Keloharju (2001) also find connections between stocks having their monthly high and low and investors' propensity sell. See also Kahneman and Tversky (1979) for a psychological literature reference on the importance of reference points. The second hypothesis is linked to the examination of reference price effect on investors buy vs. sell decision.

Hypothesis 2: Investors propensity to sell rather than buy stocks is higher if the stock price is over (under) the one month maximum (minimum) price.

I will also control for the effect of volatility in an investors decision to whether buy or sell stocks. The model includes two independent variables related to both stock price and stock market volatility. The figures are calculated from the squared average returns over the 59 past trading days.

Hypothesis 3: Increase in volatility is positively related to investor's propensity to rather sell than buy stocks.

I will also report some insider characteristics variables including insiders' gender, family relations and wealth. These variables are investigated to study whether behaviour of different insider types diverges from each other.

6 EMPIRICAL RESULTS

Panels A, B and C in Table 16 present the effect of stocks and markets past return performance on the investors' decision making process of whether to buy or sell stocks. The regression coefficients reveal no long lasting systematic behaviour across the different investor categories but there seems to appear short lived momentum behaviour for most of the different categories. As can be seen from Panels A, B and C in Table 16, the coefficients for all five groups of investors have both positive and negative values. That implies that the possible momentum or contrarian behaviour of an investor, does not last as we move from one time window to another.

The negative coefficients for the first four trading days prior to the transaction (Panel A in Table 16) indicate that the insider investors seem to be momentum orientated in the short run and that high past returns make it more likely that the investors under review will buy rather than sell a stock. For Analysts and Brokers that momentum behaviour lasts quite steadily for four trading days prior to the trade and indicated by the t-statistics for the respective days the figures are with statistical significance. If we move the focus on the multi-day return windows the coefficients seem to have almost equally large but positive regression coefficients. Panel A suggests that for days -5 to -59, the positive market-adjusted returns increase the investors' propensity to sell rather than buy stocks, making them more contrarian type of investors. For Analysts that effect seems to last longer than for the other categories but with low statistical significance.

Panel D in Table 16 collects the regression coefficients and t-statistics for two reference price variables. The two dummy variables measure the effect of stock being at a one month high or low on the investors' tendency to whether buy or sell stocks. Negative values for the groups of Top Management, Analysts, Brokers and Other Employees indicate that being at a monthly low increases the propensity buy the stocks. Correspondingly for Analysts and Brokers, being at a monthly high increases the propensity to sell rather than buy stocks. All in all, the results appear to be very mixed and thus no robust conclusions can be made based on the regression coefficients.

Table 16: Determinants of Propensity Sell vs. Buy

Table reports maximum likelihood regression coefficients and t-statistics for 5 Logit regressions where each regression corresponds to an insider category. The dependent variable is based on a dummy variable which obtains the value of one if the investor sells the stock and zero in case of a buy transaction. Individual investors intraday purchases and sales of a given stock are netted separately. Panel A reports the regression coefficients for 11 past return intervals with positive market-adjusted returns, Panel B with negative market-adjusted returns and Panel C with past market returns. Panel D reports the coefficients for two reference price dummy variables associated with the stock being at a one month high or low. Panel E reports on the variables related to the stocks and markets average squared daily return over the prior 60 trading days. Panel F reports the coefficients for miscellaneous variables controlling for the investors demographics.

Independent Variables	Dependent Variable: Sell vs. Buy Dummy									
	Coefficient					t-values				
	Top Management	Auditors	Analysts	Brokers	Other Employee	Top Management	Auditors	Analysts	Brokers	Other Employee
Panel A: Max [0, Market Adjusted Return] in the Given Interval of Tradin Days Before Transaction										
0	-12.58	-5.12	-2.92	-8.63	-6.81	-1.91	-0.74	-0.21	-2.23	-1.17
-1	-1.63	-8.57	-19.02	-5.85	-0.63	-0.27	-0.37	-1.94	-1.26	-0.10
-2	2.05	42.23	-27.11	-19.49	-7.25	0.37	1.07	-3.15	-4.19	-1.43
-3	-0.14	-9.24	-5.10	-3.51	14.34	-0.03	-0.55	-0.69	-1.41	2.90
-4	-1.33	0.54	21.20	-0.75	7.44	-0.29	0.03	1.49	-0.35	1.36
[-19,-5]	6.32	4.00	9.72	11.08	8.78	3.54	0.42	2.64	6.42	4.72
[-39,-20]	-2.09	8.12	1.59	9.08	3.33	-1.27	1.10	0.33	5.48	1.83
[-59,-40]	0.25	0.88	0.31	1.17	0.26	0.16	0.13	0.09	0.90	0.17
[-119,-60]	-1.35	-8.38	3.16	0.71	-2.45	-1.33	-2.12	1.39	0.82	-2.38
[-179,-120]	-2.57	-0.97	2.09	-1.54	-3.12	-2.47	-0.21	0.84	-1.60	-3.16
[-239,-180]	-0.92	-0.79	-1.79	-1.36	-1.54	-1.13	-0.19	-0.80	-1.69	-1.85
Panel B: Min [0, Market Adjusted Return] in the Given Interval of Tradin Days Before Transaction										
0	-0.35	23.59	0.43	-4.39	-0.60	-0.06	1.41	0.05	-1.09	-0.16
-1	-5.67	-78.80	7.78	-8.11	4.99	-0.79	-1.52	0.71	-1.65	1.03
-2	6.36	12.41	1.87	0.41	2.04	0.99	0.40	0.20	0.13	0.49
-3	1.78	-32.20	4.69	7.19	6.80	0.33	-0.78	1.01	3.45	2.13
-4	12.58	-118.98	13.00	9.48	7.51	2.41	-1.46	1.42	2.64	2.32
[-19,-5]	2.21	-13.15	6.72	6.66	4.66	1.34	-1.43	2.26	4.78	3.26
[-39,-20]	-2.95	8.83	1.05	-0.32	4.06	-2.00	2.11	0.42	-0.31	3.02
[-59,-40]	1.71	11.56	-0.83	0.06	-1.99	1.08	1.70	-0.28	0.06	-1.30
[-119,-60]	0.50	-5.44	0.57	0.80	-1.05	0.63	-1.30	0.33	1.32	-1.44
[-179,-120]	-1.01	-5.46	-0.45	-1.14	-1.93	-1.17	-1.00	-0.27	-1.92	-2.41
[-239,-180]	0.60	-3.86	1.03	-0.51	-0.97	0.65	-0.68	0.57	-0.78	-1.24
Panel C: Market Returns in the Given Interval of Tradin Days Before Transaction										
0	5.53	81.70	18.66	1.36	0.05	1.12	1.52	1.14	0.21	0.01
-1	-2.91	-44.61	13.43	4.62	8.70	-0.50	-0.80	0.80	0.72	1.25
-2	-7.83	-15.15	11.93	7.79	3.73	-1.33	-0.37	0.69	1.18	0.55
-3	10.27	20.62	-10.58	2.32	23.62	1.98	0.58	-0.65	0.38	3.58
-4	3.68	-91.37	22.24	-2.93	22.24	0.67	-1.70	1.39	-0.48	3.33
[-19,-5]	2.03	-34.86	5.89	4.12	6.06	1.40	-1.91	1.08	2.07	2.92
[-39,-20]	-0.16	-36.15	2.38	1.50	0.29	-0.13	-2.42	0.40	0.70	0.14
[-59,-40]	-2.37	-20.55	2.44	0.58	-1.34	-1.78	-0.94	0.38	0.26	-0.61
[-119,-60]	0.87	-1.69	-0.19	-0.32	0.15	1.34	-0.13	-0.04	-0.15	0.10
[-179,-120]	0.38	-43.12	4.91	2.03	1.07	0.60	-2.36	1.34	1.40	0.80
[-239,-180]	1.03	-15.12	-0.37	-0.47	0.70	1.80	-1.67	-0.22	-0.71	1.01

Table 16: Determinants of Propensity Sell vs. Buy (continued)

Independent Variables	Dependent Variable: Sell vs. Buy Dummy									
	Coefficient					t-values				
	Top Management	Auditors	Analysts	Brokers	Other Employee	Top Management	Auditors	Analysts	Brokers	Other Employee
Panel D: Reference Price Variables										
Sell price < min price over days [-19,-1]	-0.41	0.85	-0.31	-0.45	-0.70	-1.54	0.72	-0.58	-2.22	-3.15
Sell price > max price over days [-19,-1]	-0.29	-0.12	0.81	0.10	-0.08	-1.86	-0.20	1.93	0.68	-0.53
Panel E: Volatility Variables										
Average (return) ² of stock over days [-59,0]	11.02	-27.54	-57.22	-0.62	-46.04	0.57	-0.94	-2.06	-0.07	-2.72
Average (market return) ² over days [-59,0]	110.50	-451.23	-524.21	119.37	40.32	1.20	-0.66	-1.13	0.74	0.32
Panel F: Miscellaneous Variables										
Male	0.67	4.41	-0.37	0.03	0.33	2.79	2.05	-0.71	0.15	2.26
Number of Children	-0.03	1.02	-0.47	0.10	-0.11	-0.69	1.02	-2.75	1.76	-1.88
Spouse	-0.25	-23.25	0.99	-0.21	0.34	-1.95	0.00	2.73	-2.03	2.68
Wealth	0.01	-0.16	0.11	-0.02	-0.01	1.35	-1.65	3.75	-1.39	-0.41
N	1322	83	330	1799	1482					
R ²	0.073		0.214	0.119	0.113					

7 SUMMARY AND CONCLUSIONS

As recent public debate has highlighted, the general public as well as the legal experts and insiders themselves still have major difficulties in understanding the real nature of inside information, the group of insiders in general and the essence of insider regulations. The media has shown interest only when there has been suspected cases of market abuse, giving bad connotation for the whole concept and at the same time labelling the whole group. The objective of this thesis was to give faces to those corporate insiders by reporting on their family relations, personal wealth, trading activity and investor behaviour.

The basis of Finnish insider legislation is The Securities Market Act that was recently changed to better meet the directives of the EU legislation. The most important changes concerned the expression of inside information and the keeping of insider registers. According to the new regulations, an insider can express price sensitive information only to another insider. The group of insiders obliged to disclose their trades was extended to also cover the persons closely associated with an insider i.e. spouses and underage children. The changes did not give any better tools on how to make a distinction between information and inside information. However, the Supreme Court precedent set by the case of Jouko K. Leskinen clarified the Supreme Court's stance on the important issue of when the information becomes inside information and also how the Securities Markets Act's ambiguous definition "information of precise nature" should be interpreted.

Generally speaking the Finnish corporate world is extremely male dominated and the phenomenon is further highlighted, if we examine only the top position in the Finnish companies. According to my statistics, over 74% of all the corporate insiders are men. If we put the emphasis on the specific titles, we find that for the chairmen of the board, managing directors and board members the same figures are 98, 96 and 85 respectively. By grouping all the most influential positions together we find that in investment service firms, the proportion of men is 92% and for issuer companies the same figure is 85. The statistics presented in this thesis reveal that there are several listed companies who have not accepted a single woman to their boards or top positions.

The most common family type among the whole group of insiders is a cohabiting couple with two children, but out of all 1,694 insiders over 30% live alone. The average number of children in all insiders' families is 1.9 while the same statistic for all Finnish families is 1.8. Having children is more likely for male insiders rather than for female insiders and in addition the average number of children is also higher for men. Another interesting finding is that single parenthood seems to be more common among the cream of Finnish corporate world compared to the general Finnish population.

The stock holdings of the Finnish insiders seems to be extremely concentrated and according to my findings the top 25 insider investors' proportion from all insider holdings was 93.8% for issuers' insiders and 76.8% for investment service companies' insiders. The own stock ownership is not clear for the issuer companies' insiders even though the sample consists of the companies' key personnel. Only some 60% of the issuer insiders have holdings in their own company's stock, which seems quite low considering the strategic attempts to increase the employees' commitment level. The zero holdings are not found only from lower levels of the company hierarchy but also from top management and board of directors.

On average the active investment service insiders execute over 22 transactions per year, but out of those 689 insiders who own stocks, only 52% executed transactions during the one year period under review. Thus, active trading is extremely concentrated to a small group of insiders, which is seen from the large gap between median and average figures for trading activity. It seems however, that the male insiders are much more active traders than their female counterparts. Male insiders' portfolios seem also to be larger, both in terms of portfolio value and number of stocks, indicating that their portfolios are better diversified compared to the female insiders' portfolios. Out of all data sets 8194 transactions executed during the studied one year period, over 40% were done through controlled corporations or closely associated persons. For female insiders the figure is much higher.

The binomial logistic regression did not reveal any significant pattern in different insider subgroups investor behaviour. The regression coefficients contain only a very weak indication of short lived momentum behaviour for certain sample subgroups. In general, the results were very mixed and no concrete conclusions can be made on the basis of the regression coefficients.

This thesis contributed to the field of Finnish insider studies by defining the characteristics of the insiders as a separate group of financially aware individuals, offering descriptive evidence on the male dominance in the Finnish corporate world and concentration of the wealth and trading activity.

List of references

- Agnew, J., Balduzzi, P., Sunden, A., 2003. Portfolio choice and trading in a large 401(k) plan, *American Economic Review* 93, 193-215.
- Badrinath S.G., Lewellen W., 1991. Evidence on tax-motivated securities trading behaviour. *Journal of Finance* 46, 369-382.
- Badrinath S.G., Wahal S., 2002. Momentum Trading by Institutions. *Journal of Finance* 57, 2449-2478.
- Barber B., Odean T., 2000. Trading Is Hazardous to Your Wealth: The Common Stock Investment Performance of Individual Investors. *Journal of Finance* 55, 529-1004.
- Barber B., Odean T., 2001. Boys will be boys: Gender, overconfidence, and common stock investment. *Quarterly Journal of Economics* 116, p261-292.
- Barberis, N., Huang, M., Santos, J., 1999. Prospect Theory and Asset Prices. The Center for Research in Security Prices, Working Paper No. 494, 1-49.
- Benartzi, S., Thaler, R., 1995. Myopic Loss Aversion and the Equity premium puzzle. *The Quarterly Journal of Economics* 110, 1, 73-92.
- Bushman, R., Piotroski, J., Smith, A., 2005. Insider Trading Restrictions and Analysts' Incentives to Follow Firms. *Journal of Finance* 60, 35-66.
- De Bondt, W., 1998. A portrait of the individual investor. *European Economic Review* 42, 831-844.
- Choe H., Kho B-C., Stulz, R., 1999. Do Foreign Investors Destabilize Stock Markets? The Korean Experience in 1997. *Journal of Financial Economics* 54, 227-264.

Eckbo, E., Smith, D., 1998. The Conditional Performance of Insider Trades. *Journal of Finance* 53, 467-498.

Gillette, A., Noe, T., Rebello, M., 2003. Corporate Board Composition, Protocols, and Voting Behavior: Experimental Evidence. *Journal of Finance* 58, 1997-2032.

Givoly, D., Palmon, D., 1985. Insider trading and the exploitation of inside information: some empirical evidence. *Journal of Business* 58, 69-87.

Graham, J., Harvey, C., Hai H., 2005. Investor competence, trading frequency, and home bias. Working paper, Duke University.

Gregory A., Mataka J., Tonks I., Purkis R., 1994. UK Directors' Trading: The Impact of Dealings in Smaller Firms. *Economic Journal* 104.

Grinblatt M., Keloharju M., 2000. The investment behavior and performance of various investor types: a study of Finland's unique data set. *Journal of Financial Economics* 55, 43-67.

Grinblatt M., Keloharju M., 2001. What Makes Investors Trade?. *Journal of Finance* 56, 589-616.

Grinblatt M., Titman S., Wermes R., 1995. Momentum investment strategies, portfolio performance, and herding: A study of mutual fund behaviour. *American Economic Review* 85, 1088-1105.

Heath C., Huddart S., Lang M., 1999. Psychological factors and stock option exercise. *Quarterly Journal of Economics* 114, 601-627.

Heath, C., Tversky, A., 1991. Preferences and beliefs: Ambiguity and the competence in choice under uncertainty. *Journal of Risk and Uncertainty* 4, 5-28.

Jaffe, J., 1974a. The Effect of Regulation Changes on Insider Trading. *Bell Journal of Economics and management Science* 5.

Jaffe, J., 1974b. Special Information and Insider Trading. *Journal of Business* 47

Jenter D., 2005. Market Timing and Managerial Portfolio Decisions. *Journal of Finance* 60, 1903-1949.

Kahneman D., Tversky A., 1979. Prospect theory: An analysis of decision under risk. *Econometrica* 47, 263-291.

Kajander A., 2002, Inside Insider trading – On the Market-Timing Ability of Corporate Insiders on the Finnish Market. Pro Gradu, Helsinki School of Economics.

Karhunen J., Keloharju M., 2001. Shareownership in Finland 2000. *Finnish Journal of Business Economics* 50, 188-226.

Kasanen J., 1999. Ilmoitusvelvollisten osakeomistus ja -kaupat Helsingin Pörssissä. *Suomen Pankki E:16*, Helsinki.

Lakonishok J., Lee I., 2001. Are Insiders Trades Informative?. *The Review of Financial Studies* 14, 79-111.

Linnainmaa J., 2006. The Limit Order Effect. Working paper, University of Chicago.

Lundeberg M., Fox P., Punccohar J., 1994. Highly Confident but Wrong: Gender Differences and Similarities in Confidence Judgments. *Journal of Educational Psychology* LXXXVI, 114-121.

Malmendier, U., Tate, G., 2005. CEO Overconfidence and Corporate Investment. *Journal of Finance* 60, 2661-2700.

Nunn, K., Madden, G., Gombola M., 1983. Are some insiders more “inside” than the others?. *Journal of Portfolio Management*, Spring, 18-22.

Pope P., Morris R., Peel D., 1990. Insider Trading: Some Evidence on Market Efficiency and Directors' Share Dealings in Great Britain. *Journal of Business Finance & Accounting* 17, 359-380.

Prince M., 1993. Women, Men, and Money Styles. *Journal of Economic Psychology* XIV, 175-182.

Ritter, J., 2003. Behavioral Finance. *Pacific-Basin Finance Journal* 11, 429-437.

Roine, S-L., 2005. Sisäpiiriläisen Opas, Suomen Pörssisäätiö.

Shapira, Z., Venezia, I., 2001. Patterns of behavior of professionally managed and independent investors. *Journal of Banking and Finance* 25, 1573-1587.

Seyhun N., 1986. Insiders' Profits, Costs of Trading, and Market Efficiency. *Journal of Financial Economics* 16, 189-212.

Seyhun N., 1988. The information Content of Aggregate Insider Trading. *Journal of Business* 61.

Shefrin H., Statman M., 1985. The disposition to sell winners too early and ride losers too long: Theory and evidence. *Journal of Finance* 40, 777-790.

Shen Q., Szakmary A., Sharma S., 2005. Momentum and contrarian strategies in international stock markets: Further evidence. *Journal of Multinational Financial Management* 15, 235-255.

Sias R., Starks L., 1997. Institutions and Individuals at the Turn-of-the-Year. *Journal of Finance* 52, 1543-1562.

Thaler, R. Johnson, E., 1990. Gambling with the house money and trying to break even: the effects of prior outcomes on risky choice. *Management Science* 36, 643-660.

Weber, M. Camerer, C., 1998. The disposition effect in securities trading: an experimental analysis. *Journal of Economic Behavior & Organization* 33, 167-184.

Appendix 1

Persons subject to the declaration requirement according to FSA Standard 5.3, Pages 8-10

Issuers

- Chairman of the board of directors or deputy chairman
- Member or deputy member of the board of directors
- Chairman of the supervisory board or deputy chairman
- Member or deputy member of the supervisory board
- Chief executive officer (CEO)
- Deputy CEO
- Auditor or deputy auditor
- Auditing firm employee who bears main responsibility for auditing the company
- Other person belonging to top management who receives insider information on a regular basis and has authority to make decisions on the company's future development and organisation of its business

Market Participants

Central securities depository's, securities exchange's, other marketplaces' or option corporations':

- Chairman of the board or deputy chairman
- Member or deputy member of the board of directors
- Member or deputy member of the supervisory board
- Chief executive officer (CEO)
- Deputy CEO
- Auditor or deputy auditor
- Auditing firm employee who bears main responsibility for auditing the company
- Other employed individuals who receive insider information on a constant basis due to their position or work-related task

Securities broker's or settlement party's

- Chairman of the board or deputy chairman
- Member or deputy member of the board of directors
- Member or deputy member of the supervisory board

- Chief executive officer (CEO)
- Deputy CEO
- Auditor or deputy auditor
- Auditing firm employee who bears main responsibility for auditing the company
- Broker
- Investment analyst
- Other employed individuals who receive insider information on a constant basis due to their position or work-related task

Fund management company or a custodian

- Chairman of the board or deputy chairman
- Member or deputy member of the board of directors
- Chief executive officer (CEO)
- Deputy CEO
- Auditor
- Auditing firm employee who bears main responsibility for auditing the fund management company or custodian
- Other such individuals employed by the custodian who in their work related tasks have an opportunity to access information concerning the investment operations of the mutual fund
- Shareholders of the fund management company or a corresponding person referred to in section 9, chapter 2 of the Securities Markets Act.

Appendix 2: Sample Companies

Issuer Companies	Investment Service Companies
ALDATA SOLUTION OYJ	ALEXANDER CORPORATE FINANCE OY
AMANDA CAPITAL OYJ	ALFRED BERG OMAISUUDENHOITO OY
COMPTTEL OYJ	ALFRED BERG RAHASTOYHTIÖ OY
ELISA OYJ	ALFRED BERG SE, HELSINKI BRANCH
FINNAIR OYJ	AURATOR VARAINHOITO OY
FISKARS OYJ ABP	DEUTSCHE BANK
FORTUM OYJ	ELINA VARAINHOITO OY
F-SECURE OYJ	ENSKILDA SECURITIES AB
HK RUOKATALO GROUP OYJ	EQ PANKKI OY
HUHTAMÄKI OYJ	EQ RAHASTOYHTIÖ OY
ILKKA-YHTYMÄ OYJ	EVLI INVESTMENT MANAGEMENT OY
JAAKKO PÖYRY GROUP OYJ	EVLI PANKKI OYJ
JULIUS TALLBERG-KIINTEISTÖT OYJ	EVLI RAHASTOYHTIÖ OY
KCI KONECRANES OYJ	FIDES ASSET MANAGEMENT OY
KEKKILÄ OYJ	FIDES RAHASTOYHTIÖ OY
KEMIRA OYJ	FIM CORPORATE FINANCE OY
KESKO OYJ	FIM OMAISUUDENHOITO OY
LAROX OYJ	FIM PANKKIIRILIKE OY
LASSILA & TIKANOJA OYJ	FIM RAHASTOYHTIÖ OY
LEMMINKÄINEN OYJ	GYLLENBERG ASSET MANAGEMENT OY
METSO OYJ	GYLLENBERG PRIVATE BANK OY
NEOMARKKA OYJ	GYLLENBERG RAHASTOYHTIÖ OY
NESTE OIL OYJ	HELSINGIN PÖRSSI OY
ORION OYJ	HSH GUDME CORPORATE FINANCE OY
PROHA OYJ	ICECAPITAL PANKKIIRILIKE OY
RAPALA VMC OYJ	KAUPTHING BANK OYJ
RAUTARUUKKI OYJ	OMX BACK OFFICE AND CUSTODY SERVICES OY
SAMPO OYJ	OMX EXCHANGES OY
SPONDA OYJ	OMX SECURITIES SERVICES OY
STONESOFT OYJ	POHJOLA RAHASTOYHTIÖ OY
SUOMINEN YHTYMÄ OYJ	SP-RAHASTOYHTIÖ OY
TALENTUM OYJ	SUOMEN ARVOPAPERIKESKUS OY
TECHNOPOLIS OYJ	SVENSKA HANDELSBANKEN
TECNOMEN OYJ	ÅLANDSBANKEN ABP
TIETOENATOR OYJ	
TURKISTUOTTAJAT OYJ	
VACON OYJ	
WÄRTSILÄ OYJ ABP	

Appendix 3: Company Level General Gender Distribution

PANEL A: Issuer Companies	Gender				Total
	Women		Men		
ELISA OYJ	0	0.0 %	21	100.0 %	21
WÄRTSILÄ OYJ ABP	0	0.0 %	17	100.0 %	17
LEMMINKÄINEN OYJ	0	0.0 %	13	100.0 %	13
ALDATA SOLUTION OYJ	0	0.0 %	12	100.0 %	12
NEOMARKKA OYJ	0	0.0 %	8	100.0 %	8
SUOMINEN YHTYMÄ OYJ	0	0.0 %	7	100.0 %	7
HK RUOKATALO GROUP OYJ	1	4.2 %	23	95.8 %	24
FINNAIR OYJ	1	4.5 %	21	95.5 %	22
COMPTEL OYJ	1	5.9 %	16	94.1 %	17
VACON OYJ	1	5.9 %	16	94.1 %	17
TECNOMEN OYJ	1	7.7 %	12	92.3 %	13
F-SECURE OYJ	1	9.1 %	10	90.9 %	11
RAPALA VMC OYJ	1	10.0 %	9	90.0 %	10
STONESOFT OYJ	2	10.5 %	17	89.5 %	19
HUHTAMÄKI OYJ	2	11.8 %	15	88.2 %	17
SAMPO OYJ	3	12.5 %	21	87.5 %	24
JAAKKO PÖYRY GROUP OYJ	2	14.3 %	12	85.7 %	14
METSO OYJ	2	14.3 %	12	85.7 %	14
KCI KONECRANES OYJ	4	14.8 %	23	85.2 %	27
FISKARS OYJ ABP	3	15.0 %	17	85.0 %	20
TIETOENATOR OYJ	4	16.7 %	20	83.3 %	24
KESKO OYJ	3	17.6 %	14	82.4 %	17
TECHNOPOLIS OYJ	3	18.8 %	13	81.3 %	16
ILKKA-YHTYMÄ OYJ	10	19.2 %	42	80.8 %	52
LAROX OYJ	3	20.0 %	12	80.0 %	15
TALENTUM OYJ	2	20.0 %	8	80.0 %	10
FORTUM OYJ	9	20.5 %	35	79.5 %	44
RAUTARUUKKI OYJ	7	21.2 %	26	78.8 %	33
ORION OYJ	3	21.4 %	11	78.6 %	14
SPONDA OYJ	3	21.4 %	11	78.6 %	14
LASSILA & TIKANOJA OYJ	3	23.1 %	10	76.9 %	13
KEMIRA OYJ	7	25.0 %	21	75.0 %	28
NESTE OIL OYJ	7	25.9 %	20	74.1 %	27
TURKISTUOTTAJAT OYJ	5	26.3 %	14	73.7 %	19
PROHA OYJ	8	26.7 %	22	73.3 %	30
JULIUS TALLBERG-KIINTEISTÖT OYJ	4	26.7 %	11	73.3 %	15
KEKKILÄ OYJ	8	29.6 %	19	70.4 %	27
AMANDA CAPITAL OYJ	6	31.6 %	13	68.4 %	19
Total of Issuer Companies	120	16.1 %	624	83.9 %	744

Appendix 3: Company Level General Gender Distribution (Cont.)

PANEL B: Investment Service Companies	Gender				Total
	Women		Men		
DEUTSCHE BANK	1	7.1 %	13	92.9 %	14
FIM RAHASTOYHTIÖ OY	6	17.6 %	28	82.4 %	34
EQ PANKKI OY	9	19.1 %	38	80.9 %	47
EVLI INVESTMENT MANAGEMENT OY	5	19.2 %	21	80.8 %	26
FIM PANKKIIRILIIKE OY	8	19.5 %	33	80.5 %	41
SP-RAHASTOYHTIÖ OY	7	20.0 %	28	80.0 %	35
ELINA VARAINHOITO OY	3	20.0 %	12	80.0 %	15
OMX BACK OFFICE AND CUSTODY SERVICES OY	1	20.0 %	4	80.0 %	5
OMX SECURITIES SERVICES OY	1	20.0 %	4	80.0 %	5
FIM OMAISUUDENHOITO OY	9	22.0 %	32	78.0 %	41
EVLI RAHASTOYHTIÖ OY	10	23.3 %	33	76.7 %	43
EQ RAHASTOYHTIÖ OY	7	24.1 %	22	75.9 %	29
FIM CORPORATE FINANCE OY	4	25.0 %	12	75.0 %	16
ICECAPITAL PANKKIIRILIIKE OY	4	25.0 %	12	75.0 %	16
SVENSKA HANDELSBANKEN	8	26.7 %	22	73.3 %	30
ÅLANDSBANKEN ABP	10	27.8 %	26	72.2 %	36
KAUPTHING BANK OYJ	30	29.1 %	73	70.9 %	103
GYLLENBERG ASSET MANAGEMENT OY	14	29.2 %	34	70.8 %	48
ALFRED BERG OMAISUUDENHOITO OY	7	29.2 %	17	70.8 %	24
EVLI PANKKI OYJ	26	29.2 %	63	70.8 %	89
HSH GUDME CORPORATE FINANCE OY	8	29.6 %	19	70.4 %	27
AURATOR VARAINHOITO OY	4	30.8 %	9	69.2 %	13
GYLLENBERG RAHASTOYHTIÖ OY	9	33.3 %	18	66.7 %	27
HELSINGIN PÖRSSI OY	13	36.1 %	23	63.9 %	36
FIDES ASSET MANAGEMENT OY	6	37.5 %	10	62.5 %	16
FIDES RAHASTOYHTIÖ OY	17	38.6 %	27	61.4 %	44
OMX EXCHANGES OY	14	38.9 %	22	61.1 %	36
ALFRED BERG SE, HELSINKI BRANCH	27	39.7 %	41	60.3 %	68
ENSKILDA SECURITIES AB	22	40.7 %	32	59.3 %	54
POHJOLA RAHASTOYHTIÖ OY	27	47.4 %	30	52.6 %	57
GYLLENBERG PRIVATE BANK OY	22	47.8 %	24	52.2 %	46
SUOMEN ARVOPAPERIKESKUS OY	18	52.9 %	16	47.1 %	34
ALFRED BERG RAHASTOYHTIÖ OY	37	54.4 %	31	45.6 %	68
ALEXANDER CORPORATE FINANCE OY	8	57.1 %	6	42.9 %	14
Total of Investment Service Companies	402	32.5 %	835	67.5 %	1237
Total of All Companies	522	26.4 %	1459	73.6 %	1981

Appendix 4: Company Level Gender Distribution of Board Memberships*

PANEL A: Issuer Companies	Gender				Total
	Women		Men		
ELISA OYJ	0	0.0 %	8	100.0 %	8
WÄRTSILÄ OYJ ABP	0	0.0 %	8	100.0 %	8
ALDATA SOLUTION OYJ	0	0.0 %	7	100.0 %	7
NEOMARKKA OYJ	0	0.0 %	6	100.0 %	6
TECNOMEN OYJ	0	0.0 %	6	100.0 %	6
VACON OYJ	0	0.0 %	6	100.0 %	6
COMPTEL OYJ	0	0.0 %	5	100.0 %	5
ILKKA-YHTYMÄ OYJ	0	0.0 %	5	100.0 %	5
KEKKILÄ OYJ	0	0.0 %	5	100.0 %	5
LEMMINKÄINEN OYJ	0	0.0 %	5	100.0 %	5
SUOMINEN YHTYMÄ OYJ	0	0.0 %	5	100.0 %	5
TECHNOPOLIS OYJ	0	0.0 %	5	100.0 %	5
PROHA OYJ	0	0.0 %	3	100.0 %	3
STONESOFT OYJ	0	0.0 %	3	100.0 %	3
FISKARS OYJ ABP	1	11.1 %	8	88.9 %	9
HUHTAMÄKI OYJ	1	14.3 %	6	85.7 %	7
JULIUS TALLBERG-KIINTEISTÖT OYJ	1	14.3 %	6	85.7 %	7
KCI KONECRANES OYJ	1	14.3 %	6	85.7 %	7
KESKO OYJ	1	14.3 %	6	85.7 %	7
ORION OYJ	1	14.3 %	6	85.7 %	7
RAPALA VMC OYJ	1	14.3 %	6	85.7 %	7
SAMPO OYJ	1	14.3 %	6	85.7 %	7
AMANDA CAPITAL OYJ	1	16.7 %	5	83.3 %	6
JAAKKO PÖYRY GROUP OYJ	1	16.7 %	5	83.3 %	6
LAROX OYJ	1	16.7 %	5	83.3 %	6
TURKISTUOTTAJAT OYJ	2	18.2 %	9	81.8 %	11
FINNAIR OYJ	1	20.0 %	4	80.0 %	5
F-SECURE OYJ	1	20.0 %	4	80.0 %	5
HK RUOKATALO GROUP OYJ	1	20.0 %	4	80.0 %	5
LASSILA & TIKANOJA OYJ	1	20.0 %	4	80.0 %	5
TALENTUM OYJ	1	20.0 %	4	80.0 %	5
TIETOENATOR OYJ	3	27.3 %	8	72.7 %	11
METSO OYJ	2	33.3 %	4	66.7 %	6
SPONDA OYJ	2	33.3 %	4	66.7 %	6
NESTE OIL OYJ	3	37.5 %	5	62.5 %	8
FORTUM OYJ	3	42.9 %	4	57.1 %	7
KEMIRA OYJ	3	42.9 %	4	57.1 %	7
RAUTARUUKKI OYJ	3	42.9 %	4	57.1 %	7
Total of Issuer Companies	37	15.4 %	204	84.6 %	241

Appendix 4: Company Level Gender Distribution of Board Members* (Cont.)

PANEL B: Investment Service Companies	Gender				Total
	Women		Men		
EVLI PANKKI OYJ	0	0.0 %	6	100.0 %	6
FIM RAHASTOYHTIÖ OY	0	0.0 %	6	100.0 %	6
EVLI RAHASTOYHTIÖ OY	0	0.0 %	5	100.0 %	5
GYLLENBERG PRIVATE BANK OY	0	0.0 %	5	100.0 %	5
KAUPTHING BANK OYJ	0	0.0 %	5	100.0 %	5
ELINA VARAINHOITO OY	0	0.0 %	4	100.0 %	4
EVLI INVESTMENT MANAGEMENT OY	0	0.0 %	4	100.0 %	4
FIDES RAHASTOYHTIÖ OY	0	0.0 %	4	100.0 %	4
AURATOR VARAINHOITO OY	0	0.0 %	3	100.0 %	3
FIDES ASSET MANAGEMENT OY	0	0.0 %	3	100.0 %	3
FIM OMAISUUDENHOITO OY	0	0.0 %	3	100.0 %	3
HSH GUDME CORPORATE FINANCE OY	0	0.0 %	3	100.0 %	3
SUOMEN ARVOPAPERIKESKUS OY	0	0.0 %	3	100.0 %	3
FIM CORPORATE FINANCE OY	0	0.0 %	2	100.0 %	2
FIM PANKKIIRILIKE OY	0	0.0 %	2	100.0 %	2
HELSINGIN PÖRSSI OY	0	0.0 %	2	100.0 %	2
OMX BACK OFFICE AND CUSTODY SERVICES OY	0	0.0 %	2	100.0 %	2
OMX SECURITIES SERVICES OY	0	0.0 %	2	100.0 %	2
ALEXANDER CORPORATE FINANCE OY	0	0.0 %	1	100.0 %	1
EQ PANKKI OY	0	0.0 %	1	100.0 %	1
SP-RAHASTOYHTIÖ OY	1	5.3 %	18	94.7 %	19
OMX EXCHANGES OY	1	8.3 %	11	91.7 %	12
POHJOLA RAHASTOYHTIÖ OY	1	12.5 %	7	87.5 %	8
EQ RAHASTOYHTIÖ OY	1	16.7 %	5	83.3 %	6
ÅLANDSBANKEN ABP	1	16.7 %	5	83.3 %	6
GYLLENBERG ASSET MANAGEMENT OY	1	20.0 %	4	80.0 %	5
GYLLENBERG RAHASTOYHTIÖ OY	1	20.0 %	4	80.0 %	5
ALFRED BERG RAHASTOYHTIÖ OY	1	25.0 %	3	75.0 %	4
ALFRED BERG OMAISUUDENHOITO OY	1	33.3 %	2	66.7 %	3
Total of Investment Service Companies	9	6.7 %	125	93.3 %	134
Total of All Companies	46	12.3 %	329	87.7 %	375

* Board Members consists of the chairman of the board, board members and deputy board members.

* Board Members consists of the chairman of the board, board members and deputy board members.

Appendix 5: Company Level Gender Distribution of Top Positions*

PANEL A: Issuer Companies	Gender				Total
	Women		Men		
ELISA OYJ	0	0.0 %	20	100.0 %	20
WÄRTSILÄ OYJ ABP	0	0.0 %	9	100.0 %	9
ALDATA SOLUTION OYJ	0	0.0 %	8	100.0 %	8
NEOMARKKA OYJ	0	0.0 %	7	100.0 %	7
TECNOMEN OYJ	0	0.0 %	7	100.0 %	7
KEKKILÄ OYJ	0	0.0 %	6	100.0 %	6
LEMMINKÄINEN OYJ	0	0.0 %	6	100.0 %	6
SUOMINEN YHTYMÄ OYJ	0	0.0 %	6	100.0 %	6
PROHA OYJ	0	0.0 %	4	100.0 %	4
STONESOFT OYJ	0	0.0 %	4	100.0 %	4
COMPTTEL OYJ	1	6.3 %	15	93.8 %	16
VACON OYJ	1	6.7 %	14	93.3 %	15
SAMPO OYJ	1	8.3 %	11	91.7 %	12
FISKARS OYJ ABP	1	9.1 %	10	90.9 %	11
F-SECURE OYJ	1	10.0 %	9	90.0 %	10
ORION OYJ	1	10.0 %	9	90.0 %	10
HK RUOKATALO GROUP OYJ	1	11.1 %	8	88.9 %	9
KESKO OYJ	1	11.1 %	8	88.9 %	9
LAROX OYJ	1	11.1 %	8	88.9 %	9
HUHTAMÄKI OYJ	1	12.5 %	7	87.5 %	8
JULIUS TALLBERG-KIINTEISTÖT OYJ	1	12.5 %	7	87.5 %	8
KCI KONECRANES OYJ	1	12.5 %	7	87.5 %	8
RAPALA VMC OYJ	1	12.5 %	7	87.5 %	8
AMANDA CAPITAL OYJ	1	14.3 %	6	85.7 %	7
FINNAIR OYJ	1	14.3 %	6	85.7 %	7
JAAKKO PÖYRY GROUP OYJ	2	16.7 %	10	83.3 %	12
METSO OYJ	2	16.7 %	10	83.3 %	12
TALENTUM OYJ	1	16.7 %	5	83.3 %	6
ILKKA-YHTYMÄ OYJ	8	17.0 %	39	83.0 %	47
TIETOENATOR OYJ	4	20.0 %	16	80.0 %	20
TECHNOPOLIS OYJ	3	20.0 %	12	80.0 %	15
SPONDA OYJ	2	20.0 %	8	80.0 %	10
KEMIRA OYJ	5	23.8 %	16	76.2 %	21
RAUTARUUKKI OYJ	7	25.0 %	21	75.0 %	28
FORTUM OYJ	6	25.0 %	18	75.0 %	24
LASSILA & TIKANOJA OYJ	3	25.0 %	9	75.0 %	12
NESTE OIL OYJ	7	26.9 %	19	73.1 %	26
TURKISTUOTTAJAT OYJ	5	27.8 %	13	72.2 %	18
Total of Issuer Companies	70	14.7 %	405	85.3 %	475

Appendix 5: Company Level Gender Distribution of Top Positions* (Cont.)

PANEL B: Investment Service Companies	Gender				Total
	Women		Men		
EVLI PANKKI OYJ	0	0.0 %	8	100.0 %	8
EVLI RAHASTOYHTIÖ OY	0	0.0 %	7	100.0 %	7
FIM RAHASTOYHTIÖ OY	0	0.0 %	7	100.0 %	7
ELINA VARAINHOITO OY	0	0.0 %	6	100.0 %	6
KAUPTHING BANK OYJ	0	0.0 %	6	100.0 %	6
EVLI INVESTMENT MANAGEMENT OY	0	0.0 %	5	100.0 %	5
FIM OMAISUUDENHOITO OY	0	0.0 %	5	100.0 %	5
AURATOR VARAINHOITO OY	0	0.0 %	4	100.0 %	4
FIDES ASSET MANAGEMENT OY	0	0.0 %	4	100.0 %	4
HELSINGIN PÖRSSI OY	0	0.0 %	4	100.0 %	4
HSH GUDME CORPORATE FINANCE OY	0	0.0 %	4	100.0 %	4
SVENSKA HANDELSBANKEN	0	0.0 %	4	100.0 %	4
FIM CORPORATE FINANCE OY	0	0.0 %	3	100.0 %	3
FIM PANKKIIRILIIKE OY	0	0.0 %	3	100.0 %	3
OMX BACK OFFICE AND CUSTODY SERVICES OY	0	0.0 %	3	100.0 %	3
OMX SECURITIES SERVICES OY	0	0.0 %	3	100.0 %	3
ALEXANDER CORPORATE FINANCE OY	0	0.0 %	2	100.0 %	2
EQ PANKKI OY	0	0.0 %	2	100.0 %	2
DEUTSCHE BANK	0	0.0 %	1	100.0 %	1
SP-RAHASTOYHTIÖ OY	1	5.0 %	19	95.0 %	20
OMX EXCHANGES OY	1	7.1 %	13	92.9 %	14
POHJOLA RAHASTOYHTIÖ OY	1	11.1 %	8	88.9 %	9
ÅLANDSBANKEN ABP	1	11.1 %	8	88.9 %	9
FIDES RAHASTOYHTIÖ OY	1	16.7 %	5	83.3 %	6
GYLLENBERG ASSET MANAGEMENT OY	1	16.7 %	5	83.3 %	6
GYLLENBERG RAHASTOYHTIÖ OY	1	16.7 %	5	83.3 %	6
GYLLENBERG PRIVATE BANK OY	2	18.2 %	9	81.8 %	11
ALFRED BERG RAHASTOYHTIÖ OY	1	20.0 %	4	80.0 %	5
SUOMEN ARVOPAPERIKESKUS OY	1	20.0 %	4	80.0 %	5
EQ RAHASTOYHTIÖ OY	2	25.0 %	6	75.0 %	8
ALFRED BERG OMAISUUDENHOITO OY	1	25.0 %	3	75.0 %	4
ICECAPITAL PANKKIIRILIIKE OY	1	33.3 %	2	66.7 %	3
Total of Investment Service Companies	15	8.0 %	172	92.0 %	187
Total of All Companies	85	12.8 %	577	87.2 %	662

** Top Positions category consists of the managing director, deputy managing director, other senior company executives, chairman of the board, members of the board, deputy members of the board, chairman of the supervisory board and members of the supervisory board.

Appendix 6: Title Distribution of Multiple Registered Insiders

The table presents the title distribution of insiders who have several bases for registration e.g. 17.8 % of all the insiders who are insiders of more than one company are board members.

Title	Total	Percentage
Other basis for disclosure requirement	120	24.5 %
Principal auditor, Auditor and Deputy auditor	104	21.2 %
Board member	87	17.8 %
Person who makes investment decisions on behalf of a management company	35	7.1 %
Chairman of the board of directors	31	6.3 %
Employee dealing with orders	30	6.1 %
Managing director	26	5.3 %
Other employee	13	2.7 %
Employee of a custodian who gains information on investment activities	10	2.0 %
Member of the supervisory board	9	1.8 %
Analyst	7	1.4 %
Broker	7	1.4 %
Deputy managing director	4	0.8 %
Other senior company executive	4	0.8 %
Chairman of the supervisory board	1	0.2 %
Deputy member of the board of directors	1	0.2 %
Stock exchange employee	1	0.2 %
Grand Total	490	100.0 %

Appendix 7: Top 20 Insider Ranking

Name of Insider	# of Registrations	Title
Nyman Sixten Ove	11	Auditor
Pirhonen Pertti Sakari	8	Auditor
Suomela Eero	7	Auditor
Karhu Kim Ilmari	6	Auditor
Englund Tomi	5	Auditor
Kavetvuo Matti	5	Board memberships
Leppinen Kaija Irmeli	5	Auditor
Alen Jarmo Tapani	4	Auditor
Kurkilahti Lasse Antero	4	Kemira CEO & Board Memberships
Luoma Pekka Heikki	4	Auditor
Lyytinen Arto	4	FIM, Other Employee
Mäkinen Antti Mikael	4	*
Pajamo Pekka Kaarlo Antero	4	Auditor
Pasanen Paula Helena	4	Auditor
Raulo Jaakko	4	OMX Board member & Other
Riikkala Olli	4	Board memberships
Tuomala Juha Matti	4	Auditor
Tyster Mari	4	FIM, Other Employee
Törnroos-Huhtamäki Solveig	4	Auditor
Allonen Heikki	3	Fiskars CEO & Board memberships
EQ Rahastoyhtiö Oy, Chairman of the board of directors		
EQ Pankki Oy, Managing director		
Pohjola Rahastoyhtiö Oy, Other basis for disclosure requirement		
SP-Rahastoyhtiö Oy, Other basis for disclosure requirement		

Appendix 8: Issuer Companies Zero Holdings

Title	# of Employees	Zero Holdings	Percentage
Deputy auditor, Female	2	2	100.0 %
Deputy member of the supervisory board, Female	1	1	100.0 %
Employee of other exchange, Female	2	2	100.0 %
Principal auditor, Female	1	1	100.0 %
Deputy auditor, Male	7	7	100.0 %
Principal auditor, Male	13	11	84.6 %
Auditor, Male	7	5	71.4 %
Auditor, Female	3	2	66.7 %
Member of the supervisory board, Female	13	8	61.5 %
Chairman of the supervisory board, Male	5	3	60.0 %
Board member, Female	35	20	57.1 %
Other basis for disclosure requirement, Female	37	19	51.4 %
Member of the supervisory board, Male	47	22	46.8 %
Other basis for disclosure requirement, Male	162	60	37.0 %
Other senior company executive, Female	18	6	33.3 %
Board member, Male	142	47	33.1 %
Other senior company executive, Male	90	29	32.2 %
Deputy member of the board of directors, Male	8	2	25.0 %
Chairman of the board of directors, Male	27	4	14.8 %
Managing director, Male	31	4	12.9 %
Deputy managing director, Male	13	1	7.7 %
Managing director, Female	1	0	0.0 %
Deputy member of the supervisory board, Male	1	0	0 %
Employee of other exchange, Male	1	0	0 %
All Issuer Insiders	667	256	38.4 %

Appendix 9: Issuer Companies' Insiders' Trading Activity and Holdings

Title	# of Employees	Zero Traders (%)	Number of Securities			Buy Transactions			Sell Transaction			All Transactions			Investment Wealth		
			Mean	Median		Mean	Median		Mean	Median		Mean	Median		Mean	Median	
Auditor	5	60.0 %	5.00		2	3.20		0	9.00		0	12.20		0	8 071.50		0.00
Board member	116	48.3 %	2.45		1	2.71		0	4.02		0	6.72		1	1 018 180.98		24 479.98
Chairman of the board of directors	23	60.9 %	2.48		1	2.83		0	0.65		0	3.48		0	3 571 905.07		46 800.00
Supervisory board	33	57.6 %	1.55		2	5.15		0	2.79		0	7.94		0	87 156.49		11 948.16
Deputy managing director	12	16.7 %	3.92		2.5	0.25		0	6.00		6.5	6.25		6.5	41 188.02		12 368.20
Managing director	28	46.4 %	3.25		3	2.29		0	2.93		0	5.21		1	7 008 375.31		37 903.81
Other basis for disclosure requirement	121	43.8 %	3.43		3	0.38		0	5.62		1	6.00		1	35 581.65		3 050.25
Other senior company executive	73	56.2 %	3.21		2	0.32		0	2.38		0	2.70		0	312 514.82		6 321.78

Appendix 10: Investment Service Companies' Insiders' Trading Activity and Holdings

Title	# of Employees	Zero Traders (%)	Number of Securities			Buy Transactions			Sell Transaction			All Transactions			Investment Wealth		
			Mean	Median		Mean	Median		Mean	Median		Mean	Median		Mean	Median	
Analyst	57	29.8 %	7.65		4	3.77		0	5.46		1	9.23		2	32 403.86		2 332.00
Board member	58	34.5 %	9.62		8.5	14.14		0	17.66		3	31.79		3	235 611.89		11 563.53
Broker	110	25.5 %	10.65		6	14.55		2	11.82		3	26.37		4	38 558.56		3 325.81
Chairman of the board of directors	14	42.9 %	12.93		8	3.64		0	9.21		0	12.86		3	664 332.70		14 061.38
Deputy managing director	8	62.5 %	6.13		3.5	10.50		0	24.00		0	34.50		0	200.26		0.00
Employee dealing with orders	76	48.7 %	6.43		3.5	3.36		0	2.91		0	6.26		1	6 004.95		1 722.50
Employee of a custodian who gains information on invest	17	94.1 %	2.65		2	0.06		0	0.24		0	0.29		0	3 374.60		1 487.42
Employee of Finnish central securities	14	57.1 %	6.93		4.5	1.71		0	1.21		0	2.93		0	15 918.61		1 613.55
Managing director	16	37.5 %	12.75		10	0.88		0	2.94		1.5	3.81		2	388 404.86		13 621.17
Other basis for disclosure requirement	224	57.6 %	5.76		3	3.37		0	2.90		0	6.27		0	40 044.32		1 864.40
Other employee	43	60.5 %	6.58		3	2.70		0	4.63		0	7.33		0	1 969.50		2 004.17
Other senior company executive	3	66.7 %	25.33		24	2.67		0	1.33		0	4.00		0	107 053.02		1 664.70
Person who makes investment decisions	8	37.5 %	4.25		4.5	1.63		0	3.25		2	4.88		2	3 488.52		330.00
Stock exchange employee	21	47.6 %	5.19		3	1.86		0	1.86		0	3.71		1	9 455.26		2 348.25
Auditor	28	67.9 %	4.79		3	0.43		0	0.82		0	1.25		0	9 108.56		

Appendix 11: Mean of Children by Title Categories

Title	# of Children	Mean	N
Managing director	82	1.55	53
Other senior company executive	153	1.38	111
Deputy managing director	29	1.32	22
Auditor	47	1.27	37
Principal auditor	21	1.24	17
Deputy auditor	25	1.14	22
Person who makes investment decisions on behalf of a management company	15	1.07	14
Employee of issuer services	3	1.00	3
Employee of other exchange	7	1.00	7
Employee of finnish central securities	24	0.96	25
Broker	133	0.95	140
Board member	252	0.94	269
Employee dealing with orders	96	0.86	111
Other basis for disclosure requirement	480	0.86	557
Chairman of the board of directors	38	0.84	45
Other employee	34	0.77	44
Stock exchange employee	21	0.72	29
Analyst	51	0.70	73
Member of the supervisory board	33	0.55	60
Deputy member of the supervisory board	1	0.50	2
Employee of a custodian who gains information on investment activities	16	0.50	32
Deputy member of the board of directors	7	0.44	16
Chairman of the supervisory board	2	0.40	5
Total	1570	0.93	1694

Appendix 12: Insiders Title and Propensity to Have a Spouse

Title	Spouse	Percentage	N
Deputy member of the supervisory board	2	100.0 %	2
Other senior company executive	98	88.3 %	111
Managing director	45	84.9 %	53
Chairman of the board of directors	37	82.2 %	45
Deputy managing director	18	81.8 %	22
Chairman of the supervisory board	4	80.0 %	5
Auditor	28	75.7 %	37
Board member	198	73.6 %	269
Member of the supervisory board	43	71.7 %	60
Principal auditor	12	70.6 %	17
Deputy auditor	15	68.2 %	22
Employee of finnish central securities	16	64.0 %	25
Employee of other exchange	4	57.1 %	7
Person who makes investment decisions on behalf of a management company	8	57.1 %	14
Employee of a custodian who gains information on investment activities	17	53.1 %	32
Stock exchange employee	15	51.7 %	29
Broker	66	47.1 %	140
Other employee	20	45.5 %	44
Other basis for disclosure requirement	243	43.6 %	557
Analyst	29	39.7 %	73
Deputy member of the board of directors	6	37.5 %	16
Employee dealing with orders	41	36.9 %	111
Employee of issuer services	1	33.3 %	3
Total	966	57.0 %	1694